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Małopolska School of Economics
Editorial Office
ul. Waryńskiego 14, 33-100 Tarnów, Poland
Tel.: +48 14 65 65 553
Fax: +48 14 65 65 561
<http://zn.mwse.edu.pl>
E-mail: redakcja@mwse.edu.pl

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Foreword

This journal is an attempt to present the reader with the authors' position on contemporary knowledge of finance and management of complex organizations. The goal of the authors of the articles is to look for answers to the questions of how these organizations can be constructed and organized as well as how they can function in a situation where the pace of changes taking place in the socio-economic sphere causes the emergence of previously unknown phenomena and processes, and they raise new problems that cannot be solved without appropriate research and new knowledge. The development of the aforementioned sciences, thanks to scientific research and practical knowledge, confirms our belief that the majority of principles, statements, methods and procedures have a well-defined subject and scope of rational application. The changing world often forces us to check and even reject the existing organizational solutions or standards of research proceedings—because we come to the conclusion that they have a limited scope of adequacy and relevance to reality. Each of the presented articles making up this issue of *The Małopolska School of Economics in Tarnów Research Papers Collection*, forty-sixth edition, are focused on adapting the analysis of the world of organization and finance to the type and pace of economic and social changes. The articles, being the result of scientific work carried out as part of basic and implementation research, present a lot of interesting cognitive and application-oriented information. To a large extent they are devoted to the issues of measuring the profitability of production factors and issues of discriminatory analysis of enterprises; examining the effectiveness of supervisory boards, the efficiency of the incentive system and the functionality of the Marketing Information System; characterizing methods of analysis and assessment of new forms of cognitive tourism; as well as research into ways of reducing poverty and dynamizing regional development.

In the articles, the reader can find many original theoretical approaches and practical insights. For this reason, *The Małopolska School of Economics in Tarnów Research Papers Collection* may constitute an interesting and useful publication for theorists, as well as students and practitioners, of organization and management, economics and finance, tourism.

We are grateful to everyone who co-edited this issue of the magazine, especially the Editors who took the trouble to give their opinions on the submitted articles, the Reviewers for substantive and valuable comments, as well as the entire Editorial Team and all collaborators.

Leszek Koziol
Editor-in-Chief

ECONOMICS AND FINANCE

Is the European Union membership a sufficient factor to improve the level of regional development? The case of Albania and voivodeships in Poland

Sylwester Kozak

Warsaw University
of Life Sciences—SGGW, Poland
E-mail: sylwester_kozak@sggw.pl
ORCID: 0000-0001-9485-6704

Etleva Muça

Agricultural University of
Tirana, Albania
E-mail: evadashi@ubt.edu.al
ORCID: 0000-0002-6524-8467

Abstract: The article presents the results of research on changes in the level of regional development in Albania and in all voivodeships in Poland in the years 2010–2017. The applied annual data come from national statistical offices and include two social and six economic criteria. The study used one of the methods of multi-criteria decision analysis—TOPSIS with vector and linear parameters’ normalization. The results obtained (for both methods of normalization) indicate that in the years 2010–2017 Albania made the greatest progress in regional development, raising it from the lowest level in 2010 to comparable with several Polish voivodeships in 2017. Unlike some Polish voivodeships, Albania has significantly improved the demographic situation, conditions on the labour market and reduced employment in agriculture. The group of Polish voivodeships that have achieved the greatest progress in regional development have maintained positive demographic perspectives, increased the GDP growth, improved labour market conditions and increased the economic activity of their inhabitants. The results of the study indicate that EU membership is a favourable, but in some cases insufficient, circumstance for raising the overall living standards of households and the performance of enterprises operating in a given region.

Keywords: Albania, Poland, regional development, TOPSIS method

1. Introduction

The terms *region* and *regional development* are extremely important in analyzing socio-economic processes occurring in all countries of the world. Regional development is essential for improvement of the socio-economic conditions of the entire country. It is defined as a set of positive quantitative and qualitative changes taking place in a specific geographical area (Jasiński and Wiatrak, 2010). The effects of regional development are, among others, gains in the households’ income and increases in enterprises’ turnover, as well as in budget revenues of local and central authorities. From

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Correspondence to:
Sylwester Kozak
Szkoła Główna Gospodarstwa
Wiejskiego
Wydział Ekonomiczny
ul. Nowoursynowska 166
02-787 Warszawa, Poland
Tel.: +48 22 593 42 49

a social point of view, regional development intends to fully meet social needs and raise the society's standards of living.

Regional development is a socio-economic process of a diverse nature both in geographical, spatial and temporal dimensions. The pace of this process and structure of regional development are influenced by, among others, such factors as climate, culture, society and politics. In this context a country's membership in the European Union seems to be an important stimulant of regional development. It stems from the fact that one of the basic EU missions is to equalize the level of socio-economic development in all Member States. One of the implementation tools of this strategy are cohesion funds which are dedicated to the poorer regions of the EU. At the same time, associated or candidate countries have much more limited opportunities to benefit from the EU financial support in conducting their development programmes. As a result, they must catch up on technological and economic backlogs with an increased effort of their own society. Indicators GDP per capita, disposable income and unemployment rate have the highest importance in evaluation of regional disparities and the level of region's development (Poledníková, 2014). On the other hand, they are considered important tools for the economic performance both over time and between countries and regions (Widuto, 2016).

In the years 2010–2017, the socio-economic situation of Albania and Poland slightly improved, although the pace of the development processes in both countries was variable. It resulted, among others, from deterioration of economic conditions in the EU advanced economies, complex demographic conditions, diversified level of advancement in the new technologies.

The aim of the study is to assess the level and the size of changes through specific indicators about socio-economic development in Albania and in individual regions (voivodeships) in Poland in 2010–2017. The comparison of the economies of an independent country with Polish regions was made due to the fact that both in demographic and economic terms Albania is almost ten times smaller than Poland, and at the same time comparable to the Polish medium region. Albania as candidate member has adopted the NUTS system through the Decision of the Council of Ministers no. 1037 dated 5 December 2010 (Official Gazette, 2010). But even with the adoption with this law the regional development policy has been very fragmented (Manxhari, 2015). In addition, the model of regional development within Albania is not so clear due to the lack of implementation mechanisms and the frequency of ad hoc actions and interventions of the institutions involved (Imami, Bejko and Shutina, 2018). The results of the development assessment help to answer the question if the EU membership is a sufficient advantage for maintaining a regional advantage over areas outside the EU. The time range of the research results from the availability of statistical data (especially in the case of Albania). To assess the degree of development the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method was used, which belongs to the group of multi-criteria decision making methods (MCDA) (Roszkowska and Brzostowski, 2014).

The rest of the article has the following structure. The next part presents the results of the analysis of economic literature, followed by an analysis of the macroeconomic situation in Albania and Poland, the applied data used, methods, research results and their discussion. The entire study is summarized in the conclusions.

2. Literature review

According to one of the definitions mentioned in the economic literature, regional development is defined as a set of a number of socio-economic changes taking place in the region, which can be considered as welfare indicators (Aivazian, Afanasiev and Kudrov, 2018). It is assumed that these changes result from the implementation of development programmes, as well as the long-term impact of endogenous and exogenous factors. These processes include internal and external relations between the components of the regional socio-economic system, including enterprises and the economic structure (Chojnicki and Czyż, 2004; Feldman et al., 2005). In most cases, regional development causes favourable economic changes, i.e. the construction of new roads and infrastructure buildings or the creation of new jobs (Łaźniewska and Gorynia, 2012, pp. 177–178). Additionally, it is commonly equated with improving the economic situation. However, changes in society are also important for the situation in the region. For this reason, the implementation of development-oriented programmes should ensure an increase in the standard of living of the region's inhabitants and the competitiveness of business entities operating there (Szlachta, 1996).

In his theory of new industrial spaces Scott (1988) indicates that an adequate assessment of the level of regional development should consider changes in the variables of nature:

- quantitative—including growth of such parameters as: GDP, personal income, turnover and profits of enterprises, employment level, length of roads and railways;
- qualitative—including: improvement of health care, raising the level of education, optimal satisfaction of cultural and recreational needs, increasing quality of environment.

In similar way Kudłacz (1999, pp. 15–16) and Brol (1998, p. 17) define regional development. The first of them assumes that development of the region reflects the increase in its economic potential and standards of living of its inhabitants. The second author states, that development of the region encompasses the lasting improvement of the economic potential and boosts the level of competitiveness. In a result it raises the quality and standards of living of its inhabitants. Specific indicators of regional development may influence countries towards economic growth or the welfare level (Stanners et al., 2007, pp. 127–145). On the other hand, it is important to understand that the regional development paradigm in many countries and regions may be “partial and may be temporary” (Charles, 1994).

Sustainable development is the basic regional development strategy in the EU concept respecting the principles of balanced development. Such a policy presupposes a balance between economic, social and environmental objectives (Jacobs, 1999, pp. 21–45; Välimäki, 2002). Although it imposes some short-term restrictions (e.g. environmental or economic) in some areas, it is however effective in the long term. The principles of the sustainable development strategy are included in the process of creating development programmes by national and local administration (intra-regional policy), as well as a supranational strategy involving several Member States (interregional policy) (EU, 2013).

The main goal of the implemented EU cohesion policy is to diminish interregional differences. This is done by accelerating the development of the poorest regions and reducing their economic and social lag in relation to other EU regions. Real cohesion policy is considered a real tool for regional development because it is integrated with the most important EU poli-

cies (Brunazzo, 2016). To limit economic and civilization disparities, this strategy aims to create new development opportunities in delayed and peripheral regions. This strategy consists of, *inter alia*, the construction of transportation, telecommunication and energy networks as well as environmental protection facilities of supra-regional importance. These activities are to facilitate the integration of poorer regions with highly developed economic centres (Adamowicz, 2011).

The mission of supporting regional development includes three groups of tasks:

1. Supporting the development and structural adjustment of regions lagging behind.
2. Supporting the economic and social cohesion of areas facing structural problems.
3. Supporting the adaptation and modernization of education, training and employment policies and systems (MFIPR, 2020).

The accession to the European Union in 2004 was a strong positive impulse for regional development in Poland (Adamowicz, 2011; Gorzelak, 2009). Regional development is one of the pillars of the European Union, and cohesion funds account for over a third of the EU budget. For example, in 2019, the EU allocated over 57 billion EUR out of an overall budget of 165 billion EUR to the “Economic, social and territorial cohesion” objective (EU, 2018). For this reason, for the regional policy of the Member States, cohesion funds have become an important source of development for the whole country, and in the case of regions one of the basic sources of infrastructure projects.

3. Macroeconomic situation of Albania and Poland

Albania is a country situated in the southwestern part of the Balkan Peninsula. With a population of 2,787,600 inhabitants it covers an area of 28,748 km² (INSTAT, 2019). In pursuit of economic, social and environmental development, the country is facing the globalization process and the challenges of the twenty-first century. Recently it made a significant progress towards the economic growth with the principal goal which is fighting the poverty. Albania grew from one of the poorest nations in Europe to a middle-income country and the poverty declined by half during that period (World Bank, 2019). As an effect of the global financial crisis the period 2010–2013 was accompanied with a deceleration of GDP. During the last decade, Albania has shown a positive performance in macroeconomic key indicators and a positive trend for the country’s development. The year of 2017 was another period of economic expansion. The GDP growth increased to 3.8% and the GDP per capita to 4,007 EUR (INSTAT, 2019). One of the most important reasons for the GDP growth during the last two years was the strategic investments made by the central and local governments. However, it should be noted that Albania has the lowest GDP per capita in the Balkan region.

The state of Albanian economy is not stable. In 2017 public finances characterized with a high public debt (70% of GDP) and foreign trade shows a negative trade balance (–2.6 bn EUR) which is linked with a high level of imports. In Albania, both rural and urban areas suffer from the inefficient use of the resources, low mobilization of the local communities for an efficient decision making. The structure of working force is constantly concentrated on the agricultural sector. In 2017 the ratio of persons employed in agriculture amounted to 42% (INSTAT, 2019). However, the economic development is linked with other improving

criteria such as public infrastructure, health care, education, unemployment, social inclusion, migration and others. In Albania regional differences are significant vis-à-vis the size and poverty indicators (Merkaj, Lucchetti and Fiorillo, 2017). Albania has adopted the Innovation Strategy since 2009 with the main focus on the digitalization process in every field of life and economy in order to guarantee high security levels for the information networks, integrate and computerize the public administration and private sector services (MIPA, 2014). However, the results are not very optimistic since the actual strategy is focused only in youth capacity building and services digitalizing.

In the years 2010–2017 Poland's economic situation was variable. Its condition was significantly influenced by the situation in the EU, especially in Germany, a country whose share in exports remained on average 28% and imports 23%. In the years 2010–2011, Polish economy recovered after the negative impact of the global financial crisis. However, the crisis in public finances in the eurozone countries has contributed to another slowdown in Poland's economic growth in 2012–2013. During the following period, the economic situation slightly improved, which contributed to the raise in GDP dynamics to the level of 6.9%, as well as to improvement of the quality of the labour market. As a result, in 2013–2017 the unemployment rate fell from 9.8% to 5.4%, and the value of GDP per capita gained from 10.4 to 12.5 thousand EUR (Statistics Poland, 2020).

The economic expansion, recorded especially in 2017, had a positive impact on the condition of Poland's public finances. The value of the public debt in relation to GDP dropped from 53.2% in 2013 to 48.3% in 2017. The employment rate also grew up from 50.2% to 53.7%, respectively. During this time there were noticeable changes in the employment structure. In 2010–2017, the share of the employment in agriculture fell from 13.1% to 10.2%, while in services increased from 56.6% to 58%. The demographic situation and aging problem became important negative factors affecting the state of economy. Starting from 2013, the birth rate was negative, especially in 2015, when Poland's population decreased by 26,000 people.

The regional structure of the Polish economy is strongly diversified. According to Statistics Poland, at the end of 2017, the Masovian Voivodeship made the largest contribution to domestic GDP (22%). In terms of the size of economy, the next important voivodeships were Silesian (12.3%) and Greater Poland (9.9%). In turn, the least contribution to the country's economy came from voivodeships: Opole (2%), Podlaskie (2%) and Lubusz (2.2%). Along with the increase in the value of goods and services produced, the wealth of households also improved. The value of GDP pc in Masovia exceeded the national average by 60%. The national average was also exceeded in the following voivodeships: Lower Silesian (by 11%) and Greater Poland (9%). On the other hand, the value of GDP per capita in the Lubusz, Subcarpathian and Warmian-Masurian voivodeships was 30% lower than the national average.

4. Materials and methods

Multi-Criteria Decision Analysis Methods (MCDA) provide analytical support in the decision-making process consisting in choosing the proper solution from a finite number of alternatives. These methods have found frequent application in research in the areas of management, economics, medicine or technology (Dedania, Shah and Sanghvi, 2015).

The most important versions of MCDA methods are:

- simple Additive Weight (SAW);
- technique for Order Preference by Similarity to Ideal Solution (TOPSIS);
- compromise Ranking (or VIKOR—VIsekriterijumsko KOmpromisno Rangiranje).

One of the most recognized and widely used MCDA methods is the SAW. In this method, for each parameter (criterion) adopted for the assessment of the group of entities, the appropriate weight is assigned, which reflects the scale of its impact on the overall assessment of the entity. The final score of the attractiveness of a given entity is determined as the sum of the products of normalized values of parameters characterizing that entity and their weights. The TOPSIS method was developed by Hwang and Yoon (1981), and then improved by Lai, Liu and Hwang (1984) and Yoon (1987). Its concept assumes that each solution is characterized using a finite number of parameters (criteria) that have a positive or a negative impact on the final assessment. The best solution to a given problem has such values of the parameters that make the shortest distance to the perfect solution and the longest distance to the worst solution. In the VIKOR method developed by Opricovic (1981) and Opricovic and Tzeng (1984), the best solution is selected using a number of disproportionate (measured in different units) criteria. In the first stage, a ranking list of compromise solutions is created, each of which has a weight assigned to it. The best solution is the case with such parameters (criteria), which ensures the greatest multi-criteria “closeness” to the “ideal” solution.

In the study, the assessment of the level of regional development in Albania and voivodeships in Poland was carried out using the TOPSIS method in accordance with the following procedure.

Selection of criteria

The analysis of the literature on the subject and the set of available data about Albania and 16 voivodeships of Poland enabled to select 8 criteria C_j characterizing the socio-economic development of the region R_j . Six of them characterize the economic situations and two the social ones (Table 1). The selected criteria were divided into two groups:

1. Stimulants—having a positive impact on the assessment of a region: GDP growth, number of acting firms, monthly average wage, change in population.
2. Destimulants—having negative impact on the assessment of a region: unemployment rate, share of unemployed for 12+ months in total unemployed, share of employed in agriculture in total employed, infant death per 1000 live births.

Table 1. Set of criteria for assessing the level of regional development

Symbols	Description	Impact on development
C_1	GDP growth y/y	Stimulant
C_2	Unemployment rate	Destimulant
C_3	Share of unemployed for 12+ months in total unemployed	Destimulant
C_4	Number of acting firms per 10 000 people	Stimulant
C_5	Share of employed in agriculture in total employed	Destimulant

C_6	Monthly average wage in EUR	Stimulant
C_7	Change in population y/y	Stimulant
C_8	Infant death per 1000 live births	Destimulant

Source: Authors' own elaboration.

Assessment of weights for individual criteria

The weight for individual criterion C_j is calculated based on the following formula:

$$w_j = \frac{|Cv_j|}{\sum_{j=1}^n |Cv_j|} \quad (1)$$

where:

Cv_j —the coefficient of variation of the criterion C_j .

The weights must meet the following condition to equal 1.

Normalization of parameters

To allow a comparison of parameters x_{ij} measured in different units, a normalization procedure is required (Hwang and Yoon 1981; Wysocki, 2010). Two types of normalization were applied in the study:

1. Vector

$$z_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^m (x_{ij})^2}} \quad (2)$$

2. Linear

$$z_{ij} = \frac{x_{ij}}{\max_i x_{ij}} \quad (3)$$

Calculation of the S_i score for regions

Based on the data on w_j and z_{ij} three matrices are calculated: the normalized decision (V), the positive ideal solutions (A^+) and the negative ideal solutions (A^-):

$$V = [v_j] = [w_j \cdot z_{ij}]$$

$$A^+ = [v_1^+, v_2^+, \dots, v_n^+] \quad (4)$$

$$A^- = [v_1^-, v_2^-, \dots, v_n^-]$$

where:

v_j^+ —maximum values for stimulants and minimum for destimulants;

v_j^- —minimum values for stimulants and maximum for destimulants.

The Euclidean distances between the region R_i and the positive ideal solution and the negative ideal solutions are determined according to the following formulas:

$$d_i^+ = \sqrt{\sum_{j=1}^n (v_{ij} - v_j^+)^2} \text{ and } d_i^- = \sqrt{\sum_{j=1}^n (v_{ij} - v_j^-)^2} \quad (5)$$

where:

d_i^+ —Euclidean distance between the region R_i and the positive ideal solution;

d_i^- —Euclidean distance between the region R_i and the negative ideal solution.

The regional development score S_i for the region R_i is calculated based on the following formula:

$$S_i = \frac{d_i^-}{d_i^- + d_i^+} \quad (6)$$

The measure S_i takes values from 0 to 1, with higher values indicating a higher level of regional development.

5. Results and discussion

The research compares the values of development scores for Albania and 16 Polish voivodships (regions) in 2010 and 2017. Additionally, for robustness check the scores are calculated for the periods of 2010–2013 and 2014–2017 based on the average values of parameters within every period. Firstly, the weights of all criteria were calculated according to the equation 1 (Table 2). Due to high variability, the rate of employment in agriculture, the change in population and the GDP growth obtained the highest weight values.

Table 2. Weights of criteria characterizing the social and economic situation of a region

Weights: w_j	Criteria							
	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
	0.197	0.125	0.062	0.073	0.212	0.055	0.206	0.070

Source: Authors' own calculation based on the data of Statistics Poland and INSTAT.

Following the equations 2 and 3, the parameters x_{ij} were normalized with the vector and linear options. In the next stage, based on the equations from 4 to 6 the regional development scores S_i were calculated for the years 2010 and 2017 in two versions: using the vector and

linear normalized parameters (Tables 3 and 4). Additionally, an absolute and relative change of S_j scores between the years 2010 and 2017 were determined.

Table 3. Regional development level (version: vector normalization of parameters)

Region	Development score							
	2010	2017	Change	Change	2010–2013	2014–2017	Change	Change
AL	0.48	0.57	0.09	18%	0.47	0.48	0.01	1%
DO	0.70	0.60	-0.10	-14%	0.67	0.59	-0.08	-11%
KU	0.69	0.60	-0.10	-14%	0.67	0.58	-0.09	-14%
LE	0.68	0.47	-0.21	-31%	0.60	0.47	-0.13	-21%
LU	0.68	0.59	-0.09	-13%	0.66	0.58	-0.08	-12%
LZ	0.62	0.51	-0.11	-18%	0.56	0.51	-0.05	-8%
ML	0.67	0.70	0.02	4%	0.70	0.69	-0.02	-2%
MZ	0.67	0.70	0.03	4%	0.70	0.69	0.00	-1%
OP	0.53	0.53	-0.00	0%	0.50	0.52	0.02	4%
PD	0.69	0.63	-0.06	-9%	0.70	0.60	-0.10	-14%
PL	0.69	0.54	-0.14	-21%	0.63	0.52	-0.11	-17%
PM	0.69	0.69	0.00	1%	0.70	0.68	-0.02	-3%
SL	0.60	0.55	-0.05	-9%	0.57	0.54	-0.03	-5%
SW	0.66	0.47	-0.19	-28%	0.57	0.47	-0.10	-18%
WA	0.71	0.55	-0.16	-22%	0.69	0.54	-0.14	-21%
WI	0.65	0.67	0.02	2%	0.69	0.66	-0.03	-4%
ZA	0.69	0.57	-0.12	-18%	0.68	0.56	-0.11	-17%

Note: AL—Albania, DO—Lower Silesian, KU—Kuyavian-Pomeranian, LE—Lublin, LU—Lubusz, LZ—Łódź, ML—Lesser Poland, MZ—Masovian, OP—Opole, PD—Subcarpathian, PL—Podlaskie, PM—Pomeranian, SL—Silesian, SW—Świętokrzyskie, WA—Warmian-Masurian, WI—Greater Poland, ZA—West Pomeranian.

Source: Authors' own calculation based on the data of Statistics Poland and INSTAT.

Additionally, in order to eliminate the impact of one-off events on the final assessment of the S_j scores and for robustness check, the scores of regional development were counted for two consecutive four-year periods, i.e. for the years 2010–2013 and 2014–2017.

Table 4. Regional development scores (version: linear normalization of parameters)

Region	Development score							
	2010	2017	Change	Change (%)	2010–2013	2014–2017	Change	Change (%)
AL	0.25	0.36	0.11	44%	0.21	0.22	0.01	7%
DO	0.73	0.42	−0.31	−43%	0.62	0.37	−0.25	−40%
KU	0.63	0.35	−0.27	−44%	0.54	0.28	−0.26	−49%
LE	0.53	0.23	−0.29	−56%	0.39	0.22	−0.17	−43%
LU	0.63	0.35	−0.27	−44%	0.57	0.31	−0.26	−46%
LZ	0.40	0.22	−0.18	−46%	0.28	0.23	−0.04	−16%
ML	0.59	0.70	0.10	18%	0.65	0.70	0.05	8%
MZ	0.63	0.78	0.15	25%	0.70	0.78	0.08	12%
OP	0.26	0.24	−0.01	−5%	0.28	0.25	−0.03	−11%
PD	0.55	0.43	−0.12	−21%	0.52	0.37	−0.16	−30%
PL	0.56	0.29	−0.27	−48%	0.43	0.18	−0.24	−57%
PM	0.71	0.81	0.10	14%	0.77	0.79	0.02	3%
SL	0.40	0.29	−0.11	−28%	0.32	0.26	−0.06	−20%
SW	0.50	0.23	−0.27	−54%	0.31	0.23	−0.08	−26%
WA	0.65	0.22	−0.44	−67%	0.56	0.22	−0.34	−60%
WI	0.58	0.69	0.10	18%	0.66	0.66	−0.01	−1%
ZA	0.67	0.30	−0.37	−55%	0.56	0.27	−0.28	−51%

Note: AL—Albania, DO—Lower Silesian, KU—Kuyavian-Pomeranian, LE—Lublin, LU—Lubusz, LZ—Łódź, ML—Lesser Poland, MZ—Mazowia, OP—Opole, PD—Subcarpathian, PL—Podlaskie, PM—Pomeranian, SL—Silesian, SW—Świętokrzyskie, WA—Warmian-Masurian, WI—Greater Poland, ZA—West Pomeranian.

Source: Authors' own calculation based on the data of Statistics Poland and INSTAT.

The Pearson's correlation index for the S_i scores obtained with linear and vector normalization for all models exceeded 92%. This means that the values of regional development scores obtained using two normalization methods, i.e. vector and linear, are convergent.

The results of the assessment indicate that in 2010 Albania characterized with the lowest level of regional development in the analyzed sample. The S_i scores with vector and linear normalizations equalled to 0.48 and 0.25, respectively. Reasons for achieving such low scores could be found in extremely high share of permanently unemployed among unemployed people (62%), low quality of health care (the infant mortality rate: 62 per 1000 births), negative

growth of population (−0.6%) and low economic activity represented by low rate of operating firms (353 units per 10,000 people) and high share of people employed in agriculture (55%).

In Poland the lowest levels of regional development were found in the Opole (S_i scores of 0.53 and 0.26, respectively with vector and linear parameters' normalization), the Silesian (0.60 and 0.40) and the Łódź (0.60 and 0.40). On the other hand, the regions with the highest level of regional development in 2010 were: the Lower Silesian (0.70 and 0.73), the Pomeranian (0.69 and 0.71) and the West Pomeranian (0.69 and 0.67). The most sensitive criteria for assessing the level of development for both groups of voivodeships were: the growth rate of population, the infant mortality rate, the rate of operating firms and the share of people employed in agriculture. The least developed regions achieved the least satisfactory level of these parameters, and oppositely the most developed voivodeships—one of the highest. Among others, the population growth in the Opole amounted to −1.3%, while in the Pomeranian 2%. Similarly, the infant mortality rate in the Opole exceeded 5.3, while in the Pomeranian it was below 4.5. High economic activity in the Pomeranian reduced the level of people employed in the agriculture to 8.9% and raised to 1143 the number of operating firms per 10,000 people, while in the Opole these parameters amounted to 16.3% and 940, respectively. The results obtained for the period 2010–2013 were consistent, confirming the correctness of the results for the year 2010 (Tables 3 and 4).

In 2017 the distribution of the S_i scores has significantly changed. The level of social and economic development has raised the most in Albania. The value of the S_i scores increased by 18% and 44% to 0.57 and 0.36 (respectively with vector and linear parameters' normalization). The overall development potential of this country ceased to be the weakest in the sample analyzed. The population change rate increased to 0.1% and was higher than in eleven voivodeships in Poland characterized by a negative population change rate. The share of permanently unemployed in Albania (51%) has come down close to the levels characterizing the Subcarpathian (46%), the Podlaskie (45%) and the Kuyavian-Pomeranian (45%) voivodeships. The share of people working in agriculture in Albania decreased by 12 percentage points to 42%, while in the Lublin and the Świętokrzyskie voivodeships it decreased by only 2 percentage points to 37% and 31%, i.e. to the highest levels of this indicator in Poland. In turn, the voivodeships with the highest levels of the S_i scores are: the Pomeranian (0.69 and 0.81), the Masovian (0.70 and 0.78) and the Lesser Poland (0.70 and 0.70). Contrary to the previous group, these voivodeships are characterized by positive highest population growth rates of 0.37%, 0.35% and 0.27%, respectively. These voivodeships also achieved the highest GDP dynamics (7%, 7.8% and 8.1%), the highest values of average wages, well exceeding 1,000 EUR and the lowest unemployment level (5.4%, 5.6% and 5.3%). In addition, in 2017 the level of entrepreneurship of the inhabitants of these voivodeships was among the highest in Poland and the average number of operating enterprises per 10,000 inhabitants amounted to 1300. Similarly, like in the previous period, the S_i scores for 2014–2017 are consistent with the S_i scores obtained for the year 2017 (Tables 3 and 4).

The results of the research indicate that the European Union membership is not a sufficient premise to dynamically increase the level of regional development. Most voivodeships in Poland weakened their socio-economic development potential in the years 2010–2017. During this time, the average value of the S_i scores for Polish voivodeships decreased by 12% and

27% (respectively for the vector and linear parameters' normalization), while increased for Albania by 18% and 44%, respectively. Such disproportions in the change of development process might largely result from a significant deterioration of the demographic situation and low quality of the labour market in voivodeships with a significant share of persons employed in agriculture, among others in the Świętokrzyskie, the Lublin, and the Podlaskie.

However, the overall conclusions from the research should be adjusted with the fact that Albania is a developing country, and the economic situation in 2010 was much weaker than in all voivodeships in Poland. For this reason, in the early stages of development the rate of improvements of social and economic conditions is much higher for natural reasons.

6. Conclusions

Regional development is an important process for the social and economic conditions of the entire country and consists of positive quantitative and qualitative changes taking place in a specific geographical area. Its effects include: an increase in the income of the population and turnover of operating enterprises, as well as more complete satisfaction of social needs and raising the standard of living of the society living in it.

In the years 2010–2017, the socio-economic situation in Albania and in Poland slightly improved, although it was variable, which resulted, among others, from deterioration of economic conditions in the EU advanced economies, complex demographic conditions, diversified level of advancement in the new technologies.

The research results indicate that in 2010 the level of regional development in Albania was lower than in all voivodeships in Poland, what represented high share of permanently unemployed among unemployed people, low quality of health care, negative growth of population and low economic activity represented by low rate of operating firms and high share of people employed in agriculture.

In 2010 in Poland the most sensitive criteria for the social and economic development of voivodeships were: the growth rate of population, the infant mortality rate, the rate of operating firms and the share of people employed in agriculture. The least developed regions (the Opole, the Silesian and the Łódź) achieved the least satisfactory level of these parameters, and oppositely the most developed voivodeships (the Lower Silesian, the Pomeranian and the West Pomeranian)—one of the highest. To some extent, the growing importance of innovation has contributed to regional development in Poland. In the years 2014–2018, the share of R&D employees in general employed in Poland increased from 0.66% to 0.8%, and the ratio of domestic R&D expenditure to GDP from 0.94% to 1.21% (GUS, 2019).

During the period of 2010–2017 Albania made the highest progress in the regional development within the analyzed sample. It significantly improved demographic situation achieving the population change rate higher than in eleven Polish voivodeships, reduced the share of permanently unemployed to the level close to the Subcarpathian, the Podlaskie or the Kuyavian-Pomeranian. The progress was supported, among others, by implementation of the governmental programmes dedicated to creation of ICT and information society in Albania which was grounded on the European model, such as the “e-Europe”, “i-2010” plans. Ad-

ditionally, it significantly decreased the share of people employed in agriculture close to the level in the Lublin and the Świętokrzyskie.

The results of the research indicate that the European Union membership provides opportunity for the acceleration of the process of regional development, however it is not a sufficient advantage. In case of some voivodeships in Poland deterioration in socio-economic conditions as a negative demographic situation, low quality of the labour market or high employment in agriculture significantly limited the pace of enhancement of standards of living and performance of the economy in a region. Although, drawing the overall conclusions from the comparison of the pace of social and economic development, one should take into account the fact that in a case of developing country such as Albania, the initial stages of development are usually characterized by a much higher pace.

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Czy członkostwo w Unii Europejskiej jest wystarczającym czynnikiem dla poprawy poziomu rozwoju regionalnego? Przypadek Albanii i województw w Polsce

Abstrakt: Artykuł prezentuje wyniki badania zmian, jakie zaszły w poziomie rozwoju regionalnego w Albanii i we wszystkich województwach w Polsce w latach 2010–2017. Zastosowane dane roczne pochodzą z krajowych urzędów statystycznych i obejmują dwa kryteria socjalne i sześć kryteriów gospodarczych. W badaniu wykorzystano jedną z metod wielokryterialnej analizy decyzyjnej – TOPSIS z wektorową i liniową normalizacją parametrów. Uzyskane wyniki (dla obu metod normalizacji parametrów) wskazują, że w latach 2010–2017 Albania zrobiła największy postęp w rozwoju regionalnym, podnosząc go z najniższego poziomu w 2010 roku do porównywalnego z kilkoma polskimi województwami w 2017 roku. W przeciwieństwie

do niektórych polskich województw Albania znacznie poprawiła sytuację demograficzną, warunki na rynku pracy i ograniczyła zatrudnienie w rolnictwie. Grupa polskich województw, które osiągnęły największy postęp w rozwoju regionalnym, utrzymała pozytywne perspektywy demograficzne, podniosła dynamikę PKB, poprawiła warunki na rynku pracy i zwiększyła aktywność gospodarczą swoich mieszkańców. Wyniki badania wskazują, że członkostwo w UE jest sprzyjającą, ale w niektórych przypadkach niewystarczającą okolicznością dla podniesienia ogólnych standardów życiowych gospodarstw domowych i wyników przedsiębiorstw działających w danym regionie.

Słowa kluczowe: Albania, Polska, rozwój regionalny, metoda TOPSIS

Welfare versus poverty in the views and theories of the laureates of the Alfred Nobel Prize in Economic Sciences

Jan Siekierski

Małopolska School
of Economics in Tarnów, Poland

E-mail: jan.siekierski@mwse.edu.pl
ORCID: 0000-0003-0805-6036

Abstract: The motive for choosing the topic in the presented article is the deep dichotomy between prosperity and poverty that still exists in the modern world. After World War II, this problem did not decrease, given the clear economic, social and political division into highly-, medium- and under-developed countries. The latter in the UN nomenclature are described as “developing” rather than the previously used name: Third World countries. The main aim of the study is to indicate the scientific achievements in these areas of Nobel Prize winners affecting welfare policy and eradication of poverty within the dynamically developing “welfare economics”. Considerations in this regard—in a reasoned way—are preceded by a discussion of the population theory of T. R. Malthus, as well as a presentation of income disparities in the light of the theory of distribution. Even before World War II, the authors V. Pareto, A. C. Pigou and A. Bergson made achievements in analyzing welfare economics in pioneering theoretical studies. Contemporary research on these topics is also presented, which was carried out by last year’s Nobel Prize winners E. Duflo, A. Banerjee and M. R. Kremer dealing with the economics of the development of the poorest countries. An outline of the welfare state concept adopted after World War II in some Western countries is presented. Welfare policy and eradication of poverty in the poorest countries is described, based largely on the results of research by Nobel Prize winners.

Keywords: Nobel laureates in economics, welfare, poverty, theories of welfare and poverty economics, welfare policy and eradication of poverty, welfare state

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Correspondence to:
Jan Siekierski
Małopolska Wyższa Szkoła
Ekonomiczna w Tarnowie
Katedra Zarządzania
ul. Waryńskiego 14
33-100 Tarnów, Poland
Tel.: +48 14 656 55 38

1. Introduction

In economics literature, the problem of economic efficiency, but also welfare and poverty, including the issue of social justice, has attracted attention for many years. In particular, attention is paid to welfare in the context of poverty, especially when we consider the consequences of the large

divergence of these phenomena in society, which entail deep divisions and social conflicts, conflicts of interest, etc.

The aim of the article is to identify and analyze the scientific achievements of Nobel Prize winners in those areas that concerned welfare policy and eradication of poverty, especially in the poorest countries.

This study will present the main aspects of welfare and poverty in the light of the views and theories formulated by the classic and neoclassical writers of economics: Vilfredo Pareto, Arthur Cecil Pigou, Abram Bergson, Léon Walras, writing their work before World War II. The theory of distribution will be discussed in the light of the diversity of income of the population, followed by pioneering theoretical inquiries including Pareto's welfare economics theory, Bergson's "newer" economics and Pigou's welfare economics theory.

Following that, the results of research in this field after the Second World War will be presented, developed by contemporary economists concentrated on "welfare economics" who have received the honourable distinction of the Alfred Nobel prize for achievements in the field of welfare and poverty. The final part of the article will present welfare policy and eradication of poverty in the modern world.¹

The following research methods were used in the article: critical analysis of literature, reports, expert opinions.

2. Welfare versus poverty

Welfare is defined as the state of high (total) satisfaction of material (living) and spiritual needs of individuals and the whole society. The ethical concept derived from Jeremy Bentham was not accepted in classical economics, but later found acceptance in economics (Alfred Marshall, Léon Walras) in terms of utilitarianism and in contemporary neoclassical economics. The level of national income per capita has become the most general exponent of the degree of welfare. In the Geneva method, in the construction of the indicator of social welfare, the state and changes in welfare, taking place under the influence of many conditions and factors, were taken into account. Nobel laureates also have a share in these searches and solutions, including William D. Nordhaus, who developed the "measure of economic welfare" in 1983. Different, new approaches to this issue related to measuring the average level of satisfaction of needs were associated with the development of the Lorenz curve, transformation ratio, net economic welfare category, as well as the Gini coefficient. Other groups of measures include indicators of the income diversity of society, adopted in the model of national income distribution, and the decile method—according to 10 wealth groups (Milewski and Kwiatkowski, 2005, p. 175).

The opposite of welfare is the concept of poverty, which consists in the lack of sufficient material resources to meet the life needs of the individual, family and the wider society in general, e.g. in countries with low or very low levels of national income per capita. In addition, poor people and families often have income allowing them to live only on a minimum subsistence level, mainly in the area of necessary food expenditure. This applies above all to the situation

¹ See previous studies by the author of this article on the achievements of Nobel Prize winners in economics: Siekierski and Sarat, 2006; Siekierski, 2010; Siekierski, 2012.

of minorities, the unskilled, the disabled, migrants in isolated camps, those living in stagnant rural areas, as well as among the unemployed seeking work in cities. Often they are people without qualifications, also women who are generally in a worse situation on the labour market (the problem of discrimination, access to higher-level jobs and with a lower level of wages). The deepening of social stratification intensifies the division of the population into rich and poor who are deprived of privileges and rights, e.g. access to education in a significant number of underdeveloped countries. A particularly severe effect of underdevelopment, especially backwardness in agriculture, is the threat to food security in the conditions of the climate crisis, e.g. in Nigeria, where the UN (FAO) reports hunger and even starvation among children. At the same time, there is the problem of a lack of adequate, necessary medical assistance and a lack of access to treatment in universal healthcare and insurance.

3. Population theory of Thomas Robert Malthus. Demographics and sustenance of the population

The issue of welfare or poverty in the world is connected with the concept of optimal population numbers in the light of views expressed about the overpopulation of the globe. In the “law of population” formulated by the classical economist Thomas R. Malthus (1788–1834), “the population—in the absence of obstacles—are increasing exponentially. Livelihoods increase in only arithmetic progression” (Malthus, 1925, p. 58). In his opinion, this asymmetry must lead to negative social effects. This author believed that the primary source of food shortage, and thus the cause of poverty and unemployment, is the high rate of reproduction of those who do not have adequate income.

The views of Malthus had far-reaching repercussions, including in the English poor laws, and in the views expressed on misery and poverty. In more recent times, his views contributed to a better understanding of demographic and economic patterns—the balance between population and food resources to feed humanity (Blaug, 1994, pp. 95–96). Contemporary proponents of limiting the number of births, especially in the less developed countries in Asia and Africa, refer to this thread of Malthus’s reflections (Samuelson and Nordhaus, 1996, pp. 386–390).

Neo-Malthusians maintain that all efforts to improve the economic situation in backward countries must be subordinated to effective birth control. In discussions about contemporary demographic problems, this approach is often questioned—as Mark Blaug writes in more detail in his book *Economic Theory in Retrospect*.

Opponents of neo-Malthusianism point to the history of developed countries, where population growth has stabilized and in some even decreased, together with economic growth.

4. Income disparities of the population in the light of the theory of distribution

Income and assets in society are unevenly distributed, ultimately deciding about wealth and thus welfare or privation (poverty). For the first time in a scientific way, this problem was taken up with the emergence of the science of political economy by Adam Smith, creating the

foundations of the theory of distribution. It was based on the canvas of the theory of value, later developed in classical economics by David Ricardo, and in the nineteenth century also by Karl Marx. In Book Three of *The wealth of nations* Adam Smith writes about the natural increase in prosperity and the different pathways that lead different nations to prosperity (Smith, 1954, pp. 481–487). He also referred to the theory of factors of production, assuming that each of the three basic factors through work participates in the creation of product value, and in the process of income distribution everyone receives what he has created. This theory was later developed by the French classical economist Jean-Baptiste Say (1763–1832).

Contemporary economics of the theory of distribution is based most widely on the concept of marginal productivity presented in the book *Distribution of wealth* by the American economist John Bates Clark (1847–1938), published in 1899. Several basic reasons for the unequal distribution of income are listed, i.e. assets and possession of the factors of production, entrepreneurship, type of work performed (amount of labour input), talents and education of the employee (Milewski and Kwiatkowski, 1993, p. 173).

It is believed that the effects of inequality in the distribution of income for active people are positive because they motivate a desire for achievement and thus increase economic efficiency. On the other hand, inequalities on the part of those who are not very involved can evoke a sense of harm, injustices often exclude individuals, causing dissatisfaction, creating conflicts that are not conducive to stability of development and integration. This is grossly visible when the inequalities are very large, i.e. between people living in luxury and others in poverty. When this division translates into different countries, there is a great diversity of income in the world. They often result from the sum of historical events and economic conditions (extensive or intensive development). Ultimately, this state of affairs, as well as the varying degrees of affluence of social groups, is reflected in productivity. So income distribution is uneven both within and between countries. This problem is clearly visible when it is considered over longer periods and David Begg presents this problem in this approach. In conclusion, the author states: “poverty tends to persist. Poor nutrition directly reduces productivity, and low incomes do not allow the education of children, nor the purchase of machinery and tools that increase productivity” (Begg et al., 1993, p. 33). Milewski and Działo believe that empirical studies in Poland, Hungary and Germany show that poverty-promoting factors are similar in all countries: a large number of people in the household, low economic activity and education level, young age, living in the countryside and working in agriculture.

On the other hand, in the short term, current data of Witold Pawłowski for developing countries show the following disproportions: 10% of the population of India owns as much as 56% of assets, while in China it is 41%. The first of these countries has a population of 1.3 billion, including 250 million people in extreme poverty (Pawłowski, 2020).

5. Welfare economics in the light of pioneering theoretical inquiries before World War II

Welfare economics is a relatively new branch of modern economic science that deals with the problems of distribution and consumption, as well as the functioning of the economy in the world from the point of view of universal welfare. Referring to the period before World

War II, more specifically to the end of the nineteenth century, the French economist Léon Walras (1834–1910), like Alfred Marshall (1842–1924), replaced the name of political economy with economics. Walras is the first representative of the mathematical school in which he exposed the problems of general equilibrium and issues of value. His goal was to build a coherent economic system that would maximize social welfare ensuring justice in conditions of perfect competition.

An Italian economist from the school of mathematics Vilfredo Pareto (1848–1923) is also of particular importance in the pioneering approach to the issue of welfare. Also dealing with value and general equilibrium, he formulated the concept of the “optimum”, which later began to be called the Pareto. This principle was often developed in economics literature in views on efficiency, as well as in courts evaluating the notions of equality and justice.

British economist Arthur C. Pigou (1912) and Abram Bergson referred to the above-mentioned problems and authors in the theory of “new welfare economics” (1938).

5.1. Pareto’s welfare economics theory

Pareto worked closely with Walras at the University of Lausanne. His work is extremely comprehensive. In the theory of value, he decidedly deviates from the theory of utility (Austrian and English school—William Stanley Jevons) towards the theory of choice in individual management, price structure and general equilibrium (Taylor, 1991, pp. 140–141). Among economists taking into account the utility category, welfare has always been treated as the sum of the measurable utilities in individual households of a given community. Pareto argued that improving a person’s welfare at the expense of another cannot be quantified in terms of utility. Formulating the conditions for maximizing welfare, he generalized them in the aforementioned Pareto optimum: the optimum can be considered a situation where it is impossible to increase the welfare of one person without worsening the situation of others. Each unit has its own sense of welfare, which is why it is difficult to talk about adding up utility (Drabińska, 2002b, pp. 234–235).

To sum up, the concept of welfare according to Pareto is based on three assumptions:

- every person is the best judge of his welfare;
- social welfare can be defined in terms of the welfare of individuals;
- the welfare of various individuals cannot be added up and compared.

In relation to the Pareto theory, Tibor Scitovsky extended it by introducing the concept of “double criterion for the growth of social welfare” (Blaug, 1994, p. 594).

5.2. Pigou’s welfare economics theory

Arthur Cecil Pigou (1877–1959), English neoclassical economist, was the successor of Alfred Marshall at the University of Cambridge. He introduced to his theory a general analysis instead of partial, as in Marshall’s, measuring the level of welfare in monetary units. Pigou identified two basic criteria for measuring welfare:

- increase in net social product with unchanged input of factors of production;
- distribution of national income in favour of people living in worse material conditions.

In the first case, the national product was maximized by relocation of production factors, levelling their social marginal productivity (taking into account externalities, which—in his opinion—contribute to the increase of social welfare). In the second case, social welfare in his understanding was the sum of the needs of individual units that have been met.

The maximum welfare function is determined with an equal distribution of income between individual units having identical marginal utility functions of the goods and services purchased (Drabińska, 2002b, pp. 234–235). As Mark Blaug notes, the hallmark of the political recommendations applied according to Pigou is “the transfer of wealth from rich to poor”, if such a transfer does not reduce national income, then it must increase welfare. The main message of A. C. Pigou was the need to take action to increase the income level of the poor (Blaug, 1994, p. 602).

5.3. Bergson’s “Newer” Welfare Economics

In 1938, the British economist Abram Bergson introduced the principles of “new” welfare economics based on the formulation of general equilibrium by Walras and Pareto’s definition of social welfare. The “new” welfare economics rejected the measurable concept of utility, introducing the concept of ordinal utility and the concept of the social welfare function. According to Bergson, the task of this new economics should be to present the goals and intentions of political moves in this matter and to indicate coherence or lack thereof for individual combinations of goals and means. Later studies on the topic of “public choices” also went in this direction (Kenneth J. Arrow, Duncan Black, James M. Buchanan, Jerome Rothenberg, Gordon Tullock) (Kłobukowska, 2013). And in this case it can be assumed that the economics of welfare is not free from value judgments, e.g. increasing welfare is seen as desirable, and therefore is considered in terms of normative economics.

6. Contemporary welfare economics after World War II in the light of the scientific achievements of the winners of the Alfred Nobel prize in the field of economics

The Alfred Nobel Prize has been awarded since 1901 for outstanding achievements in science (physics, chemistry), medicine and literature, as well as for political activity for world peace.

On the occasion of the 300th anniversary of the Central Bank of Sweden, a fund was created to award cash prizes to outstanding economists for their contribution to the development of the economic sciences. In this way, these sciences have been included in the award since 1969 under the official name: The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel (Kłobukowska, 2013).

Thematically, modern economic thought is largely considered through the prism of the research, discoveries and applications of scientific achievements of economists, including Nobel Prize winners, in practice and socio-economic policy. Thus, they influence the global economy in the age of globalization and integration. It is worth noting that important issues regarding international economic relations and environmental management are still un-

solved, especially the ensuring of sustainable development in the light of the climate and ecological crisis. The coexistence of prosperity and poverty continues to be a great dilemma for our world, especially for developing countries, although the achievements and contribution of welfare economics to world politics is undoubtedly significant. New challenges point to the great difficulties of implementing knowledge in the economic practice of many countries.

This part of the article will present the achievements of Nobel Prize winners in the field of welfare economics, taking into account their interests: welfare, on one side of the coin, and poverty, on the other.

6.1. Nobel Prize winners in economics—the contribution to knowledge about social welfare and its increase

Outstanding economists who were Nobel Prize winners for their contributions to welfare research include: Paul A. Samuelson, John R. Hicks, Kenneth J. Arrow, Gérard Debreu, and also partly James M. Buchanan, Ronald Coase, John Harsanyi and non-Nobel laureates: Harold Hotelling, Nicholas Kaldor, Abba Lerner, George Stigler, Gordon Tullock (Kłobukowska, 2013). In 2018, William D. Nordhaus and Paul Romer received the Nobel Prize for “linking climate change with long-term macroeconomic analysis”. Nordhaus developed the “measure of economic welfare” in 1998.

Paul A. Samuelson (1915–2009)—a leading American Keynesian, received the Nobel Prize for his contribution “to raising the level of analysis in economic science” in 1970. He dealt with welfare economics. In 1950 he constructed a “welfare boundary function” for which all Pareto efficiency criteria were met. In this way he determined the point of maximum social welfare at which the corresponding curves of attainable utility meet the highest indifference curve of Bergson’s social welfare function (Samuelson and Nordhaus, 1996).

John R. Hicks (1904–1989)—a British economist, together with K. J. Arrow (born in 1927), he received the Nobel Prize for his “pioneering contributions to the welfare theory” in 1972. Like P. A. Samuelson, he thought that it was possible to use the optimum in the Pareto sense to evaluate business activities based on value judgments. Therefore, in value theory, Hicks rejected the concept of marginal utility and relied on the Pareto indifference curves, as well as the widespread use of the concept of substitution as the basis for all relationships between economic quantities. In this way, he built an entire economic system, consisting of value theory and general static equilibrium in conditions of perfect competitiveness (Taylor, 1991, pp. 308–324). In 1950, Arrow formulated a paradox proving that for various individually assigned ranks there is no general social rank of needs. By assuming the Arrow paradox, the constructed social welfare curve would be above the individual rank curve. In this regard, Arrow refers to his own studies relating to social choices and general equilibrium (Arrow, 2001, p. 331).

Gérard Debreu (1921–2004)—an American economist of French descent, mathematician by education, received the Nobel Prize for “introducing new methods into economic theory and formulating his theory of general equilibrium” in 1983. Initially, he developed the general equilibrium model with K. J. Arrow already in 1954, presenting significant proof of equilibrium. In turn, in a collaboration with Frank Hahn written in 1971, in the proof of

equilibrium he assumed that there were no imperfectly known future markets. In the spatial analysis of production and consumption—in the context of consumer behaviour—he studied the economy in conditions of uncertainty. In these considerations, he included content related to welfare economics. It is believed that G. Debreu has made a particularly large contribution to the theory of consumer choice (Dabińska, 2002a, p. 571).

6.2. Nobel Prize winners in economics—the contribution to knowledge about poverty and its eradication

Outstanding economists who were Nobel Prize winners for researching the problems of poverty in the modern world include: Amartya K. Sen, Angus K. Deaton and Abhijit V. Banerjee, Esther Duflo, Michael R. Kremer. Other very well-known researchers in this field include John B. Rawls (1921–2002), an outstanding American philosopher who developed the “theory of justice” in 1971 justifying the idea of the welfare state.

Amartya Kumar Sen (born 1933)—an Indian economist, student of English economist Joan V. Robinson, working at the universities of Calcutta, Oxford and Cambridge, as well as at economics colleges in London. He was awarded the Nobel Prize for “contribution to research in the field of welfare economics”, dealing entirely with privation and poverty, the causes of social inequality and hunger in the world. He pointed out that the reason for hunger is not insufficient food production, but low real incomes of a significant part of the population, or even a lack of income. Sen believed that an increase in real income of the poorest social strata is the most effective method of ensuring food security in families. He developed the “maximum” function, i.e. the maximum welfare of the least profitable unit. In his works Sen proved that by using the optimum in the Pareto sense we will not avoid value judgments. It is noteworthy that A. Sen is also the author of the “social progress index” (Drabińska, 2004, p. 519).

Angus K. Deaton (born 1945)—a British-American economist, born in Edinburgh, academic lecturer at Princeton University, specialist in microeconomics. Nobel laureate for “analysis of poverty, consumption and welfare” in 2015 as a result of many years of research on these issues. In his academic work, he tried to answer the questions of: how to measure welfare and poverty, and how consumer choice mechanisms work, so that economic policies that promote welfare and poverty reduction can be designed. In these considerations, he took into account the relationship between consumption and prices, comparing savings with incomes and their impact on poverty and economic development. In addition, he was interested in the economics of health. Together with John Y. Campbell, he formulated the Deaton paradox in consumer behaviour, stating that consumer behaviour does not change much even in the face of an income shock. In the 1980s, he and John Muellbauer developed an innovative model of consumer demand. Deaton was also interested in the issue of social inequalities and measuring the state of health of the society. He introduced statistical analysis of household choices to “development economics”. On 14 October 2015 he received the Nobel Prize for research on poverty and welfare.

Abhijit V. Banerjee (born 1961)—an Indian economist, employee of the Massachusetts Institute of Technology (MIT) and the University of Cambridge. He received the Nobel Prize in Economics with two co-authors for his work on “alleviating global poverty”. Together with

J. E. Duflo, he conducted in-depth research on medical and educational issues in India. In the city of Hyderabad they tested the effectiveness of microcredit programmes in promoting economic development. A. V. Banerjee, J. E. Duflo, M. R. Kremer and J. Robinson (American economist) used field experiments in a series of studies from 2000 devoted to agriculture in sub-Saharan Africa. They were related to the implementation of modern technologies, intensifying agricultural production by mineral fertilization in the conditions of field experiments. They pointed to the impact of these innovative solutions in increasing the incomes of small farms. The implemented programmes covered over 400 million people. Their research in the field of health and medicine is widely used by the World Health Organization (WHO) (Wikipedia, 2019a).

Esther Duflo (born 1972)—a French-American economist, working at the Massachusetts Institute of Technology (MIT). Her main research areas are: poverty, development economics, economics of education, healthcare, access to financial markets and other microeconomic issues important for developing countries. The author's focus is on well-thought-out, radical ways of fighting poverty. Hence the Nobel Prize for “an experimental approach to alleviating global poverty” with A. V. Banerjee and M. R. Kremer in 2019 (Wikipedia, 2019b).

Michael Robert Kremer (born 1964)—an American economist, professor at Harvard and Cambridge universities, together with A. V. Banerjee and E. Duflo was awarded the Nobel Prize in 2019 for “an experimental approach to alleviating global poverty”. These winners, working together, prepared an innovative field experiment project that they implemented in several low- and middle-income countries over two decades. In addition to applying the method of randomized control tests (RCT), they also implemented methods to generalize the results of individual experiments to larger populations, various geographical regions and organizations implementing projects, local or national governments (Buttler, 2020, pp. 40–42).

Their research, or more precisely its results, allowed the adoption of recommendations for public policy and made a significant contribution to “development economics”. As noted earlier, they have applied their experimental approach in a comprehensive manner in many areas of social life, including education, health care and medicine, also in implementing new, innovative technologies in agriculture. The above research was conducted most widely in western Kenya (Duignan, 2019).

Finally, it should be emphasized that economics is becoming an experimental science. Researchers are subjecting local communities to sophisticated tests, and the research results obtained and conclusions can be surprising and promising. Randomized control tests (RCTs) can complement the traditional statistical methods used in economics. Research using RCT methods was given the status of “gold standard”.

7. Welfare policy and eradication of poverty

Welfare policy in many Western countries took on a real organizational and institutional shape after World War II. It resulted primarily from the awareness of the conflicts that had occurred in the world—mainly in Europe—in the twentieth century, especially in the face of proclaimed ideologies (fascism) and the collapse of principles of democratic systems in the German Reich and Italy in the interwar period.

Earlier, in the nineteenth century, actions were taken that indicated the intervention of states in creating a welfare state (Goldstone and Disraeli in Britain, Bismarck in Germany). However, it was only the consequences of the great economic crisis (1929–1933), especially for the broad social masses of many countries, that forced governments to take measures to prevent poverty and to improve the living standards of the population. In the United States, the policy of the “new deal” of President Franklin Delano Roosevelt prepared the ground for the creation of a welfare state after World War II as part of a widely adopted policy of state interventionism. The situation was similar in the United Kingdom, France and other Western countries as a result of widespread acceptance of the theoretical assumptions of Keynesianism formulated by John Maynard Keynes in the *General Theory of Employment, Interest and Money* published in London (1936).

In parallel with the dynamic development of the economic sciences, in particular the branches of “welfare economics” and “development economics” using their achievements in economic policy, the concept of the welfare state was presented and implemented in some Western countries.

The assumption of this economic policy was the implementation of growth enabling a lasting improvement of the standard of living of the whole society and the protective functions of the state. The idea of popular capitalism based on a managerial revolution and the democratization of capital for equalizing income in society was proclaimed (most widely in Great Britain). Abba P. Lerner and John Kenneth Galbraith from the United States were particularly active proponents of this policy.

The importance of welfare policy has increased with use of the results of research in welfare economics by Nobel Prize winners since the 1970s. Currently, the levelling of income differences in society with the use of income and tax policies is widely used. Wage policy plays an important role here with the aim of systematically increasing wages, including a minimum wage. An important place in the caring role of the state is played by civil and social benefits and social assistance programmes, including those for the disabled. Therefore, support for the income of the agricultural population in the European Union is provided by direct payments from EU funds. In our country, politicians proclaim the idea of the so-called Polish social welfare, in which the “500+” family benefits are an important part.

In policies for eradicating poverty, social security in a system of cash and benefits in kind is implemented in many countries. Social security understood in this way means guaranteeing a minimum level of existence, protecting against pathologies and social exclusion. Therefore, it is about security in the social and food dimension, as well as protection against the risk of losing work and health, protection of motherhood, assistance for children and in old age, primarily thanks to the help provided in the form of benefits, insurance and legal protection on a national and international scale.

An important way to eradicate poverty in Poland and European Union countries is the uptake of professional activity by pensioners who simultaneously receive benefits from the social security system. At the end of December 2018, the number of people aged 60 and over who were paying health insurance into the social security system other than as a pensioner was almost 708 thousand.

Among them, the largest group were people working under an employment contract—38.5 percent of all professionally-active pensioners. On the other hand, those running a non-agricultural business constituted 30.4%, and those working on mandate contracts—25.5%.

It is also emphasized that all forms of employment are equally profitable for pensioners. The number of pensioners will increase. The reason for their professional activity is often the need to increase their household budget due to their obtaining low social security benefits (Szewioła, 2020, p. B10).

The second factor is retirement age, which, apart from a temporary increase, has not changed in Poland for a hundred years. Sixty-year-olds in the 2020s will enjoy better health than their grandparents, therefore, the need arising from low benefits is in line with the possibilities arising from the state of health.

8. Conclusion

The problems of welfare and poverty were taken up in research in modern times with the emergence and development of the science of political economy—classical and neoclassical. (T. R. Malthus is one of the forerunners in this field—with the indication of the demographic aspects of these issues.) They also include theories of distribution regarding income disparities that affect the living conditions and living standards of the population (A. Smith, D. Ricardo). In contemporary economics, American economist, author of the modern theory of distribution—J. B. Clark has special merits. On the subject of welfare and poverty itself, pioneering research before World War II was carried out by the following authors of the theory of welfare economics—V. Pareto, A. C. Pigou and A. Bergson.

After World War II, research and achievements to a greater extent were carried out in the field of welfare economics by winners of the A. Nobel prize—P. A. Samuelson, J. R. Hicks, K. J. Arrow, G. Debreu, and in the field of the economics of poverty—K. Sen, A. Deaton, A. K. Banerjee, E. Duffo, M. R. Kremer.

The final part of the article presents issues related to the implemented welfare policy and eradication of poverty, as well as the concept of the welfare state. An important factor in changing the philosophy of international aid institutions was understanding and increasing the popularity of randomized controlled trials (RCTs). At the end of the last century, it became clear that the current support model, consisting of forcing developing countries to implement deep economic reforms, was not working. Aid actions by the Western world were accused, not without grounds, of ignorance of the local context.

The new pattern of aid that has been in force since the turn of the century has significantly reformed the mode of action. The road to solving the problem of poverty can lead through the implementation of thousands of modest interventions such as irrigation, feeding, deworming, micro-loans and access to drinking water. The RCT methodology fits perfectly to measure the effects of these interventions. The development of research also drives the need to obtain high-quality data on living conditions in developing countries. Previously, there was no information at all, or it had limited credibility, despite criticism of the experimental approach (Buttler, 2020, p. 42).

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Dobrobyt versus ubóstwo w poglądach i teoriach laureatów Nagrody im. Alfreda Nobla w dziedzinie ekonomii

Abstrakt: Motywem wyboru tematu w prezentowanym artykule jest wciąż występująca we współczesnym świecie głęboka dychotomia między dobrobytem a ubóstwem. Po drugiej wojnie światowej problem ten nie zmniejszył się, mając na uwadze występujący wyraźny podział ekonomiczny, społeczny i polityczny na kraje wysoko, średnio i słabo rozwinięte. Te ostatnie w nomenklaturze ONZ określane są jako „rozwijające” wobec poprzednio używanej nazwy: kraje Trzeciego Świata. Głównym celem opracowania jest wskazanie na dorobek naukowy w tych dziedzinach noblistów mających wpływ na politykę dobrobytu i zwalczania ubóstwa w ramach dynamicznie rozwijającej się „ekonomii dobrobytu”. Rozważania w tym zakresie – w sposób zasadny – poprzedzono omówieniem teorii lud-

nościowej T.R. Malthusa, a także przedstawieniem zróżnicowań dochodów w świetle teorii podziału. Osiągnięcia ekonomii dobrobytu w prekursorskich opracowaniach teoretycznych jeszcze przed drugą wojną światową odnoszą się do autorów V. Pareto, A.C. Pigou i A. Bergsona. Przedstawiono również współczesne badania na te tematy przeprowadzone przez ubiegłorocznych noblistów E. Dufflo, A. Banerjee i M.R. Kremera, zajmujących się ekonomią rozwoju krajów najuboższych. W zarysie wskazano na przyjętą po drugiej wojnie światowej w części krajów zachodnich koncepcję państwa dobrobytu. Przedstawiono politykę dobrobytu i zwalczania ubóstwa w najuboższych krajach, opartą w dużej mierze na rezultatach badań laureatów Nagrody Nobla.

Słowa kluczowe: laureaci Nagrody Nobla w dziedzinie ekonomii, dobrobyt, ubóstwo, teorie ekonomii dobrobytu i ubóstwa, polityka dobrobytu i zwalczania ubóstwa, państwo dobrobytu

Foreign ownership versus financial liquidity and debts of enterprises in Poland

**Alina
Szewc-Rogalska**

University of Rzeszów, Poland
E-mail: aszewc@ur.edu.pl
ORCID: 0000-0001-8776-1539

Marek Wąsacz

Participant of the PhD Seminar
in the Institute of Economics
and Finance at the University
of Rzeszów, Poland
E-mail: marek.wasacz@gmail.com
ORCID: 0000-0002-1617-6663

Abstract: In the environment of globalization and financialization of the economy, a distinct growth in the share of international investors in the ownership structures of enterprises in Poland has been observed. The problem of the impact of ownership structures involving international investors on the operation of enterprises in Poland is particularly important and valid. This study aims to analyze the relationship between foreign ownership and financial liquidity and debts of enterprises in Poland between 2012 and 2017. The methods use aggregated data of 8700 foreign enterprises and 42,000 domestic enterprises. In order to meet the objective of the study, the following research methods have been applied: a measurement of the volume of foreign ownership in the corporate sector and the measurement and a comparative analysis of financial liquidity and debts of foreign enterprises relative to domestic enterprises. It was found that foreign enterprises follow an increasingly aggressive strategy of financial liquidity management, and finance their business with debts to a higher extent than domestic enterprises. Foreign ownership has had a positive impact on optimization of the financial liquidity management strategy, the cash conversion cycle, and sources of funds for business. But this features a higher risk compared to domestic ownership.

Keywords: form of ownership, finance, financial performance, financial liquidity, effectiveness, enterprises in Poland

1. Introduction

Factors that determine the financial performance of enterprises are the subject of numerous discussions, both in the area of economic sciences and in economic practice. Corporate governance and ownership structure are two areas mentioned among numerous factors that affect the operation and its financial performance (La Porta et al., 2000; Bauer, Gunster and Otten, 2004; Bhagat and Bolton, 2008; Szewc-Rogalska, 2010; Jeżak, 2014; Matuszewska-Pierzynka, 2018).

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Correspondence to:
Alina Szewc-Rogalska
Uniwersytet Rzeszowski
ul. Cwiklińskiej 2
35-601 Rzeszów, Poland
Tel.: +48 17 872 16 51

The theory of corporate governance includes the research into the impact of ownership structures on the decisions made within enterprises and financial performance of these enterprises.

Foreign investors, both within industry and institutional, form a specific group (Dahlquist and Robertsson, 2001; Neupane et al., 2016; Zou, Tang and Li, 2016). The problem of the impact of ownership structures involving international investors on the operation of enterprises in Poland is particularly important and valid. In the environment of globalization and financialization of the economy, a distinct growth in the share of international investors in the ownership structures of enterprises in Poland has been observed (Szewc-Rogalska, 2018).

Despite a significant track record in research into the financial standing of foreign enterprises in Poland, there are many problems that are still not fully explained. To date, research has tended to focus on the selected aspects of financial standing, mainly profitability. Other areas of financial standing, e.g. financial liquidity and debts, are researched very rarely and only to a limited extent. Moreover, the results of this research have already become outdated in a highly volatile economic environment (for example, the research of Jasiniak, 2013).

Lack of explicit results of research into the consequences of foreign ownership is an important premise for undertaking further research. Also, it is necessary to discover an operation's financial liquidity management strategy, and it is important to define to what extent they finance their business with debts, both in the short and long term. A broader analysis of the financial liquidity, taking account of a cash conversion cycle and its specific components, would be something new, compared to the research into the Polish economy to date. It will make it possible to identify major differences in financial liquidity management strategies in the international and domestic entities.

This study aims mainly to analyze the relationship between foreign ownership and financial liquidity and debts of enterprises in Poland from 2012 to 2017. The research covers all enterprises hiring at least ten employees. Using the classification applied by the Central Statistical Office, a distinction is made between foreign enterprises and domestic enterprises.

The following research hypotheses were verified in the study:

H1—There is a consistent growth of volume of foreign ownership in the corporate sector in Poland, especially in terms of share in the number of employees and the volume of generated revenues.

H2—Foreign enterprises apply an increasingly aggressive strategy of financial liquidity management compared to domestic enterprises.

H3—Foreign enterprises finance their business operations with debts, both in the short and long term, to a higher extent compared to domestic enterprises.

In order to meet the objective of the study and verification of three research hypotheses, the following research methods have been applied: a measurement of the volume of foreign ownership in the corporate sector in Poland and the measurement and a comparative analysis of financial liquidity and debts of foreign enterprises relative to domestic enterprises. Four ratios have been suggested to measure the volume of foreign ownership and ten financial ratios suggested for the evaluation of financial liquidity and debts of enterprises. Thus, in this case, a comparative analysis of aggregated foreign enterprises vs. the aggregated domestic enterprises makes it possible to determine the relationship between foreign ownership and financial liquidity and debts of enterprises.

2. Literature review

Motives for investors undertaking business operations within the host country are described by numerous economic theories, including, *inter alia*, a theory of location, a theory of international production, a theory of endogenic growth, eclectic theory of J. H. Dunning (Gorynia et al., 2006). In cases where there is a decision to make foreign direct investments, long-term perspectives of the development of a given type of business operation in a host country are usually of the key importance. Ongoing profitability of these investments is less significant (Róžański and Socha, 2017; Nazarczuk and Krajewska, 2018).

The experience of many countries shows that foreign investors very often put a lot of pressure on the regulations of a host country on lower rates of income tax, tax exemptions, transfer of income and capital. In the environment of global competition, these companies get access to many new markets and to more creative factors of production. At the same time, they take advantage of the benefits of managing in a global market (Kasiewicz, 2009).

In a time of crisis, foreign investors are in the situation of having a conflict of interest and usually give priority to stability of the financial system of their native country rather than to the financial security of subsidiaries located in host countries. It translates into nationalization of losses in the time of crisis, as opposed to internationalization of benefits in good times (see for example Pawłowicz, 2008; Wypych, 2015).

Foreign investors often become majority shareholders of the companies in the host country. Controlling shareholders affects the decisions made in companies and usually exercises effective ownership governance (Ferreira and Matos, 2008). Foreign enterprises implement the strategy of financing their business on an international scale and thus, in many cases, they have more options for obtaining sources of financing than domestic enterprises (Róžański, 2018).

The research conducted in many countries shows (Hallward-Driemeier, Iarossi and Sokoloff, 2002; Fukao, Ito and Kwon, 2005) that the enterprises having international capital demonstrate higher effectiveness than domestic enterprises. Some other authors, however (Aydin, Surmeli and Sayilir, 2009), indicate that findings of the research are not explicit. The completed research for the Polish economy has often focused on the evaluation of efficiency of work and profitability of foreign enterprises. This research shows that foreign enterprises feature very high work efficiency compared to domestic enterprises (Szewc-Rogalska and Leszczyńska, 2011; Puchalska, 2014).

The research shows (Szałucka and Szóstek, 2013) that profitability of sales in the entities with foreign capital was only slightly higher than the total profitability of enterprises in general. A significant advantage occurred in case of profitability of equity. Enterprises with a share of foreign capital are more innovative and carry out a more risky policy of debts compared to domestic enterprises, achieving a higher level of profitability than domestic enterprises (Jasiniak, 2013).

The research performed for the Polish economy (Szewc-Rogalska, 2012) shows that international investors expect a low rate of return on the invested capital in the companies operating in host countries, as low profits mean paying lower taxes in these countries. These investors may also gain benefits arising from a dominating position in shareholding, e.g. by manipulating transfer prices (Szewc-Rogalska and Leszczyńska, 2011), payments for

licenses and management (Róžański and Socha, 2017), disbursement of high dividends (Szewc-Rogalska, 2012; Pieloch-Babiarz, 2017).

The findings of the presented research do not provide explicit answers to whether and in what aspects foreign enterprises achieve a better financial standing. Moreover, there is no research that would determine what impact foreign ownership exerts on the financial liquidity management strategies and sources of financing for enterprises.

3. Research methodology

The research covered enterprises with a headcount of ten employees or more (i.e. exclusive of micro-enterprises) from 2012 to 2017. The information published by the Central Statistical Office in Poland (Central Statistical Office, 2013a, 2013b, 2014a, 2014b, 2015a, 2015b, 2016a, 2016b; Statistics Poland, 2017a, 2017b, 2018a, 2018b) was used as a source of data. The classification used by the Central Statistical Office was used in order to find the volume of foreign ownership and identification of foreign and domestic enterprises. It provides availability of aggregated data from financial statements of enterprises and accumulated data for enterprises in general. It provided the basis for determining relevant, accumulated data for domestic enterprises. Aggregated data was used in the research; in 2017, the research covered 8700 foreign enterprises and 42,000 domestic enterprises. In 2017, the number of foreign enterprises was 0.7% higher compared to 2012, and the number of domestic enterprises was 8.8% lower.

In order to verify the research hypotheses, a specific research methodology was used, which consisted of the three following stages:

- measurement of the volume of foreign ownership in the corporate sector in Poland;
- measurement of financial liquidity and debt ratios for foreign and domestic enterprises;
- comparative analysis of foreign enterprises vs. domestic enterprises, which enables determination of the impact of foreign ownership on the financial liquidity and debts of enterprises.

In order to measure the volume of foreign ownership, four ratios were suggested, namely: the share of foreign enterprises in the number of total enterprises, the share in the number of employees, the share in generated revenues, and the share in the value of assets. Six ratios were used for the evaluation of financial liquidity of researched enterprises: current financial liquidity ratio, quick ratio, inventory cycle (in days), receivables cycle (in days), current liabilities cycle (in days) and cash conversion cycle (in days). Four ratios were used for the evaluation of debts: general debt ratio, debt to equity ratio, long-term debt ratio and tangible fixed assets to long-term liabilities ratio (cf. Sierpińska and Jachna, 2006). In some cases, due to a lack of relevant data, some adjustments needed to be made in order to enable comparison of the researched groups of enterprises. As there is no data for the category of the enterprises with foreign capital: “revenues on sales of products, goods and materials”, it was replaced with the category of “total revenues” and it was adopted for further application in the case of all groups of enterprises.

Two bases of comparisons were used in the comparative analysis of financial liquidity vs. debts of researched enterprises, i.e.: reference values provided in literature on corporate finance and comparison of the level and tendencies in the determination of financial ratios

in foreign enterprises vs. domestic enterprises. The suggested methodology of research is fully justified in the case of conducting research on aggregated enterprises (Szewc-Rogalska, 2004; Famielec, 2011). A comparative analysis of foreign enterprises vs. domestic enterprises enables determination of the impact of a form of ownership (foreign or domestic) on the financial liquidity and debts of enterprises in Poland. It is an advantage of this type of research that it covers the entire general population of enterprises in Poland. It enables identification of general tendencies of development of enterprises featuring various forms of ownership.

4. Results and discussion

The completed research shows that the share of foreign enterprises in the total number of entities grew from 15.8% to 17.1% between 2012 and 2017 (Table 1). The share of foreign ownership in Poland measured by means of the number of employees in the analyzed period grew from 30.2% to 35.3%. Between 2012 and 2017, the share of revenues of foreign enterprises in the total value of revenues achieved by enterprises in Poland grew from 39.5% to 43.3%, and the share of foreign enterprises in the total value of assets of enterprises in Poland grew from 37.6% to 38.4%.

Table 1. Volume of foreign ownership in Poland (in %)

Specification	2012	2013	2014	2015	2016	2017
Share in the number of enterprises	15.8	15.2	15.6	16.0	16.1	17.1
Share in the number of employees	30.2	30.9	32.5	33.3	33.8	35.3
Share in total revenues	39.5	39.2	39.8	41.1	42.8	43.3
Share in total assets	37.6	37.3	36.5	36.6	38.0	38.4

Source: Authors' own calculations based on the Central Statistical Office (2013a, 2013b, 2014a, 2014b, 2015a, 2015b, 2016a, 2016b), Statistics Poland (2017a, 2017b, 2018a, 2018b).

The data provided in Table 2 shows that current financial liquidity ratio in both researched groups of enterprises was within the reference range (1.2–2.0). However, in foreign enterprises, this ratio was lower than in domestic enterprises. The quick ratio in domestic enterprises was 1.05–1.08 in the analyzed period. International entities reached the value from 0.96 (2013) to 1.03 (2014). In the entire analyzed period, the level of the quick ratio in foreign enterprises was lower than in domestic enterprises. In the case of foreign entities, the values achieved in 2012–2013 and 2016–2017 were below the reference values. It is assumed that this ratio should be at least 1 within the literature. The completed research shows that foreign enterprises demonstrate a lower financial liquidity compared to domestic enterprises. It should be remembered that foreign enterprises in the vast majority are parts of larger international corporations. In the instance of problems with liquidity, they may count on the financial support of “mother companies” in most cases.

Table 2. Comparison of financial liquidity and debts of foreign and domestic enterprises in Poland

Specification	Entities	2012	2013	2014	2015	2016	2017
Current financial liquidity ratio	foreign	1.36	1.33	1.43	1.39	1.39	1.39
	domestic	1.53	1.53	1.54	1.53	1.53	1.52
Quick ratio	foreign	0.99	0.96	1.03	1.01	0.99	0.99
	domestic	1.06	1.06	1.08	1.08	1.05	1.05
Inventory cycle (in days)	foreign	30.5	30.9	30.9	31.1	31.7	31.4
	domestic	31.7	32.2	32.2	32.9	34.7	34.3
Receivables cycle (in days)	foreign	56.0	55.5	55.0	54.6	54.5	53.2
	domestic	50.2	50.2	50.3	52.2	53.3	50.5
Current liabilities cycle (in days)	foreign	92.2	92.2	89.3	87.5	88.3	85.0
	domestic	75.4	76.1	77.7	80.4	82.6	79.6
Cash conversion cycle (in days)	foreign	-5.8	-5.8	-3.4	-1.8	-2.1	-0.4
	domestic	6.6	6.4	4.8	4.8	5.5	5.2
General debt ratio	foreign	0.56	0.57	0.56	0.55	0.56	0.54
	domestic	0.45	0.45	0.46	0.48	0.48	0.48
Debt to equity ratio	foreign	1.28	1.30	1.29	1.25	1.27	1.19
	domestic	0.82	0.82	0.87	0.92	0.92	0.91
Long-term debt ratio	foreign	0.40	0.42	0.45	0.39	0.41	0.35
	domestic	0.20	0.21	0.25	0.28	0.27	0.26
Tangible fixed assets to long-term liabilities ratio	foreign	1.81	1.70	1.58	1.81	1.76	1.94
	domestic	3.88	3.63	3.17	2.89	3.14	3.17

Source: Authors' own calculations based on the Central Statistical Office (2013a, 2013b, 2014a, 2014b, 2015a, 2015b, 2016a, 2016b), Statistics Poland (2017a, 2017b, 2018a, 2018b).

The inventory cycle in foreign enterprises fluctuated from 30.5 days (2012) to 31.7 (2016) and was shorter compared to domestic enterprises. In the case of an inventory cycle, lower values that prove a faster liquidation of inventory are desirable. The receivables cycle (in days) informs about the rate of transformation of receivables into money. Lower values are better. In the entire analyzed period, this ratio was higher in foreign enterprises compared to domestic enterprises. However, a tendency for a slight reduction of this ratio from 56 days (2012) to 53.2 days (2017) was noticed in foreign entities.

The current liabilities cycle informs about a number of days after which current liabilities are paid. It is assumed that a longer cycle is beneficial as it proves a higher value of foreign capital financing business operations of the company. In the case of foreign enterprises,

a decreasing tendency in the ratio was noticed. The longest liability cycle was 92.2 days (in 2012–2013), and the shortest was 85 days (2017). In domestic enterprises, a reverse tendency was seen. The current liabilities cycle in subsequent years extended from 75.4 days (2012) to 82.6 days (2016), and then decreased to 79.6 days (2017).

The cash conversion cycle informs about how many days, on average, current assets (inventory and receivables) are financed by an enterprise's own funds. In this case, this ratio is positive. A negative value demonstrates that external suppliers of capital financed a full period of conversion of inventory and receivables into cash and, additionally, they also financed other assets. It is assumed that lower values, especially negative ones, are more valued. Foreign enterprises achieve a negative value of the ratio, but with a growing tendency, while domestic enterprises achieve a positive value, but with a decreasing tendency.

In business practice, proper inventory, receivables and liabilities management is of key importance for maintaining financial liquidity. A proper management strategy in this respect may lead to optimization of funds required for effective business operations (compare Eljelly, 2004; Sierpińska and Jachna, 2006). The completed research shows that a specific feature of foreign enterprises, compared to domestic enterprises, is a shorter inventory cycle, a longer receivables cycle, and a longer current liabilities cycle.

A shorter inventory cycle in foreign enterprises may prove to be a more effective management of inventory. In the entire analyzed period, the receivables cycle in foreign entities was longer compared to domestic enterprises. Foreign enterprises operating in Poland achieve over 30% of their revenues from export of goods or services to international markets, with payment deadlines effective for years. Along with the development of cooperation with a recipient, there is the option for extension of payment deadlines. Also, in many cases, an enterprise's major client may be "a mother company" or "a sister company" and extension of payment deadlines in situations of this type may be an additional benefit for an international investor or its subsidiaries. These actions may be treated as one of the forms of a transfer of values to native countries. Results of the research (Szewc-Rogalska and Leszczyńska, 2011; Szewc-Rogalska, 2012; Różański and Socha, 2017) indicate the problem of application of various forms of transfer of values by foreign enterprises.

In the analyzed period, the average length of the liability cycle for foreign enterprises was 89.1 days, which was 10.5 days higher than domestic entities. A lower cycle of current liabilities in foreign enterprises may result from the decision of managers seeking to finance current assets with current liabilities. A consequence of the policy implemented by foreign enterprises is a negative cash conversion cycle. It is a value desired from the perspective of financial liquidity management, as the external suppliers of capital finance a full period of conversion of inventories and receivables into cash. On the other hand, it may increase the risk of ongoing business operations (Szpulak, 2016).

In the majority of enterprises, a debt is used for support and acceleration of development. The general debt ratio is in most cases assumed to be in the range of 0.57–0.67 (Sierpińska and Jachna, 2006). Values below 0.57 indicate excessive use of the equity (many times more expensive), and values above 0.67 indicate excessive use of the debt, which may result in a financial risk for the entity. In foreign enterprises, this ratio was within the range of 0.54 (2017)

to 0.57 (2013), whereas in domestic entities its values were lower: from 0.45 (in 2012–2013) to 0.48 (in 2015–2017).

The structure of liabilities is related to the debt to equity ratio, informing of how many times debt is higher relative to equity. The value of 1.3–2.0 is considered to be safe. This value in foreign entities fluctuated within the range of 1.19 (2017) to 1.30 (2013), and in domestic enterprises it was 0.82 (in 2012–2013) to 0.92 (in 2015–2016).

A reference value of a long-term debt ratio is 0.5–1.0. In foreign entities, the long-term debt ratio was within the range of 0.35 (2017) to 0.45 (2014), whereas in domestic enterprises it featured lower values, i.e. 0.20 (2012) to 0.28 (2015). In the analyzed groups of entities, this ratio was below reference values.

The tangible fixed assets to long-term liabilities define the extent to which the value of tangible fixed assets provides security for long-term financing. The reference value of the ratio was not explicitly determined, but the assumed range is 1.5–6.0 (Sierpińska and Jachna, 2006). In foreign enterprises, this ratio was within the range of 1.58 (2014) to 1.94 (2017), whereas in domestic entities it fluctuated in the range of 2.89 (2015) to 3.88 (2012).

It was determined that foreign enterprises demonstrated higher general debt ratio, debt to equity ratio and long-term debt. Also, debts were secured with tangible fixed assets to a lower extent compared to domestic enterprises. This means that foreign enterprises finance their business operations with debt to a higher extent compared to domestic enterprises and carry out a more risky policy of becoming indebted. This is consistent with the results of the other research (Jasiniak, 2013).

The completed research shows that foreign enterprises demonstrate higher effectiveness than domestic enterprises, which is shown in their financial liquidity management, mainly in the strategy for managing the cash conversion cycle. Moreover, foreign enterprises use debt in order to achieve the financial leverage effect and generate a higher rate of return on the invested capital to a higher extent compared to domestic enterprises. The conclusion on higher effectiveness of foreign enterprises compared to domestic enterprises arises also from other research (compare: Hallward-Driemeier, Iarossi and Sokoloff, 2002; Fukao, Ito and Kwon, 2005).

5. Conclusions

The main objective of this study was to analyze the relationship between foreign ownership and financial liquidity and debts of enterprises in Poland from 2012 to 2017. It was determined that there was a consistent growth in the volume of foreign ownership in the corporate sector in Poland, especially in the case of share of foreign enterprises in the number of employees and in generating revenues (hypothesis H1). As a result of completed research, the H2 hypothesis was also verified; it assumed that foreign enterprises apply a more aggressive strategy of financial liquidity management than domestic enterprises. It was found that lower financial liquidity ratios, a shorter inventory cycle, a longer receivables cycle, and a negative cash conversion cycle compared to domestic enterprises accounted for a unique feature of foreign enterprises.

The completed research also made it possible to confirm the H3 hypothesis that foreign enterprises finance their business with debt, both short and long term, to a higher extent compared to domestic enterprises. This is demonstrated by the level of general debt ratio, the debt

to equity ratio, and long-term debt in foreign enterprises. The debts, however, were secured with tangible fixed assets to a lower extent than in domestic enterprises.

It was determined that foreign ownership supports effective management of current assets. Also, it has a positive impact on the optimization of current liability management and using more cost-effective sources of financing, mainly a merchant loan. In the case of foreign ownership, there is a tendency to use debt to a higher extent than in domestic ownership. Debt is usually a cheaper source of financing of business compared to the equity. In conclusion, it should be emphasized that foreign ownership supports more effective management of resources, but it features a higher risk than in the case of domestic ownership.

Due to the consistent growth in the importance of the foreign ownership in the corporate sector in Poland, there is a demand for further research in this area. It is noteworthy that foreign ownership may be a consequence of the occurrence of both industry and financial (institutional) international investors. The specified groups of investors have fairly different objectives of presence in enterprises. Therefore, there is a demand for further, in-depth research pertaining to various forms of foreign ownership and their impact on the effectiveness of enterprises.

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Własność zagraniczna a płynność finansowa i zadłużenie przedsiębiorstw w Polsce

Abstrakt: W warunkach globalizacji i finansjalizacji gospodarki obserwuje się wyraźny wzrost udziału inwestorów zagranicznych w strukturach własnościowych przedsiębiorstw w Polsce. Problem oddziaływania struktur własnościowych z udziałem inwestorów zagranicznych na funkcjonowanie przedsiębiorstw w Polsce jest obecnie szczególnie istotny i aktualny. Celem pracy jest analiza zależności między własnością zagraniczną a płynnością finansową i zadłużeniem przedsiębiorstw w Polsce w latach 2012–2017. W badaniach wykorzystano zagregowane dane 8700 przedsiębiorstw zagranicznych i 42 tysięcy przedsiębiorstw krajowych. Dla potrzeb realizacji przyjętego celu pracy zastosowano następujące metody badawcze:

pomiar skali własności zagranicznej w sektorze przedsiębiorstw oraz pomiar i analizę porównawczą płynności finansowej i zadłużenia przedsiębiorstw zagranicznych na tle przedsiębiorstw krajowych. Ustalono, że przedsiębiorstwa zagraniczne stosują bardziej agresywną strategię zarządzania płynnością finansową oraz w większym stopniu finansują swoją działalność kapitałem obcym niż przedsiębiorstwa krajowe. Własność zagraniczna wywiera pozytywny wpływ na optymalizację polityki zarządzania płynnością finansową, cyklem konwersji gotówki i źródłami finansowania działalności. Jednakże jest to działalność obciążona wyższym ryzykiem niż w przypadku własności krajowej.

Słowa kluczowe: forma własności, finanse przedsiębiorstwa, kondycja finansowa, płynność finansowa, efektywność, przedsiębiorstwa w Polsce

Measurement of return on capital employed in assessment of company's condition

Sławomir Lisek

University of Agriculture
in Krakow, Poland

E-mail: slawomir.lisek@urk.edu.pl
ORCID: 0000-0001-6520-7203

Lidia Luty

University of Agriculture
in Krakow, Poland

E-mail: lidia.luty@urk.edu.pl
ORCID: 0000-0001-8250-8331

Monika Ziolo

University of Agriculture
in Krakow, Poland

E-mail: monika.ziolo@urk.edu.pl
ORCID: 0000-0003-0884-4083

Abstract: The return on capital employed, as a financial ratio, is an important element of the assessment of the company's condition. It shows the benefits gained by company shareholders against the invested capital. It constitutes the basic reason for investing in a particular enterprise. Thus, it is an important diagnostic variable in the construction of a synthetic indicator of the company's financial standing. The aim of this article is to propose a universal, useful indicator of the profitability of capital which is fully relevant to the formulation of company condition assessment indicators. It is assumed that it should meet the following requirements: firstly, it should reflect the reality, rather than falsify it; and, secondly, it should refer to the return on the entire capital employed. The study has been conducted using the substantive analytical procedure as well as the empirical analysis based on ten companies listed on Warsaw Stock Exchange.

Keywords: return on capital employed, financial analysis, enterprise, synthetic indicator

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Correspondence to:
Sławomir Lisek
Uniwersytet Rolniczy im. Hugona
Kołłątaja
Wydział Rolniczo-Ekonomiczny
Katedra Statystyki i Polityki Społecznej
al. Mickiewicza 21
31-120 Kraków, Poland
Tel.: +48 12 662 43 31

1. Introduction

Irrespective of the approach to the definition of the company's objectives, it can never be neglected that one of the company's business objectives is to guarantee satisfying profits to its investor (Sudoł, 1999, pp. 65–67). Among the basic investor's yield indicators there are those showing the return on capital employed (ROCE). That is why it seems justified

to analyze ROCE indicators in terms of their usefulness for the presentation of the analyzed problem. The ROCE is a diagnostic variable important for the construction of a synthetic indicator of the company's condition.

The aim of the article is to evaluate the ROCE indicators suggested in the relevant body of literature and to propose an alternative indicator. It will be used for the construction of a synthetic indicator of the company's condition in the assessment which takes advantage of the Multidimensional Comparative Analysis instruments.

The basic indicators of the return on capital employed (ROCE) include the return on equity (ROE) (Table 1). This financial ratio shows the employment of every element of own capital in the company's operating activity: elements contributed both directly, such as the share capital or the share premium account, and indirectly, i.e. retained profits or capital revaluations. It seems, *prima facie*, that this method of ROCE measurement is the best. It shows the employment of the entire equity and its returnability in profits. And, indeed, this is the case when the analyzed company is profitable year after year and when its equity remains constant or is growing. A problem emerges when the company starts suffering such substantial losses that its equity is marginal or even negative. In this situation the indicator may even lead to incorrect conclusions. When the equity is marginal not due to the fact that the company has been underinvested and uses mainly the foreign capital but rather as a result of the equity being decreased by cumulated losses, then the indicator will show artificially high positive values (in the case of profit) or negative values (in the case of loss), whereas in reality the company's profitability may be negligible. Having negative equity and increasing losses, the company will exhibit the ROCE measured in this way as positive and, what is more, the bigger the losses, the higher the indicator will be, so it will be interpreted as showing higher profitability.

Table 1. Indicators of return on capital employed proposed in economic literature

Author	Indicator	Formula	Marking
Sierpińska and Jachna (1994) Bednarski et al. (1996) Bednarski (2007) Jerzemowska (2004) Jerzemowska (2018) Nowak (2017) Gabrusewicz (2019)	return on equity	$ROE = Z_n / K_w$	(1)
Bednarski et al. (1996) Bednarski (2007) Jerzemowska (2004) Jerzemowska (2018) Nowak (2017) Gabrusewicz (2019)	return on share capital	$R_k = Z_n / K_p$	(2)
Bednarski (2007)	financial viability	$r_k = Z_n / S$	(3)
Tarczyński (2002)	hypothetical profit	$R_h = Z_n / (0,015K_w)$	(4)

Where: Z_n —net profit, K_w —equity, K_p —share capital, S —number of shares.

Source: Authors' own elaboration based on: Bednarski et al., 1996, p. 80; Bednarski, 2007, p. 114; Gabrusewicz, 2019, pp. 258–259; Jerzemowska (ed.), 2004, p. 295; Jerzemowska (ed.), 2018, pp. 304–305; Nowak, 2017, pp. 221–222; Sierpińska, Jachna, 1994, p. 106; Tarczyński, 2002.

The return on share capital (2) shows a direct scale of benefits for the provider of the capital gained thanks to the company's operating activity. At first sight, it seems the most universal illustration of the problem. However, it applies only to the share capital. Whereas equity also has some other components which are, in one way or another, always contributed by the owners. The share premium account is contributed together with the share capital as excess of the nominal share capital invested. Retained profits also count as the capital contributed by shareholders who thus refrain from taking dividends. The capital from valuation adjustment of assets shows the realignment of the capital value (through valuation adjustment of assets) with the current value of money. Indicator (2) completely disregards this part of the contributed capital. Siemińska (2002) also used this measure to assess the company's condition. For the purposes of fundamental analysis, it was also used by Krzysztof and Teresa Jajuga (Jajuga and Jajuga, 2015).

The indicator based on formula (3) seems to be the least useful. It informs about the profit from one share. In no way does it show benefits for the investor because shares may have various values, so they may reflect various amounts invested. Therefore, there is no relation between the profit and the invested amount and the indicator does not show the return on capital employed.

The hypothetical profit (4) is a kind of compromise between indicators (1) and (2). This indicator, in compliance with the assumptions, should show how much the real profitability exceeds the hypothetical, i.e. minimal, required return on capital employed.

2. Literature review

The measurement of the return on capital employed is a focus of both Polish and foreign economic literature. Publications of Polish authors (Sierpińska and Jachna, 1994; Bednarski et al., 1996; Jerzemowska et al., 2004; Bednarski, 2007; Nowak, 2017; Jerzemowska et al., 2018; Gabrusewicz, 2019) present calculation methods (Table 1) or applications of an individual indicator (assessment of the profit from the capital invested in the company). Foreign authors most often measure the return on capital employed according to formula (1). Only the net profit is sometimes replaced with the operating profit or with the profit before tax. For instance, Graham and King (2000) used the ROE as one of the measures for examining the relation between the carrying value and the market value of shares. In the assessment of the impact of the difference in the accounting standards, especially in the use of the accruals principle, on the financial analysis in international terms they employed the indicator of profitability proposed by Lainez and Callao (2000) and King and Langli (1998). Indicator (1) was used by Griffin and Zhu (2010) in the analysis of share repurchase records and share options. On the other hand, Hung (2001) used the ROE to find out how the accounting standards, particularly the use of the accruals principle, affect safeguards for shareholders. The financial ratio of the return on equity was also used by Rueschhoff and Strupeck (1998) in the analysis of differences between the American accounting standards and the standards applicable in thirteen countries examined by them. On the other hand, Brennan and Kraft (2018) used

it to assess the effects of financial decisions taken by managers in matters related to capital structure formation.

A fundamental source of profitability assessment is properly conducted accounting and proper financial reporting. Financial reporting and accounting has proved over time to be a powerful practice, which is embedded in an institutional context and shapes economic and social processes (e.g., Soll, 2015). Baker and Barbu (2007) indeed show that accounting has been an integral part of human civilization for 4000 years. Soll (2015) demonstrates the remarkable impact of accounting on the rise and fall of great nations. The founders of modern economic thought—from Adam Smith to Karl Marx—also considered accounting as essential to developing successful businesses and modern capitalism (Soll, 2015). Accounting affects a great variety of stakeholders: not only firms, investors, bankers, and auditors, but also ordinary citizens, employees, and states. Accounting serves as a basis to set the limit for distributable profits (Paea, 2015). Mainstream accounting research has mainly investigated financial accounting by focusing on the economic consequences for shareholders (Hopwood, 2009; Callen, 2015; Sikka, 2015; Wilkinson and Durden, 2015).

Basing on the indicators of the company's financial condition, a synthetic indicator of the financial condition can be formulated by means of the Multidimensional Comparative Analysis instruments. Most frequently, it is constructed as a sum of standardized diagnostic indicators (Nowak, 1990; Tarczyński, 2002; Łuniewska and Tarczyński, 2006; Lisek and Luty, 2019). Variations in the construction may be due to a different selection of indicators, method of variable standardization, or possibly a different method of variable weighing. Moreover, Lisek (2014) proposed in his study an indicator of the company's financial condition which is the arithmetic mean of the standardized diagnostic variables. For the purposes of standardization the author uses the critical value: the upper limit in the case of the stimulant and the lower limit in the case of the destimulant.

3. Postulated indicator of return on capital employed

An indicator of the return on capital employed should satisfy two requirements. Firstly, it should reflect the reality, rather than falsify it; secondly, it should refer to the return on the entire capital employed. The indicator based on formula (1) after modification seems to be the most suitable here. The modification should eliminate the impact of unrelieved losses from the previous years. The indicator may be calculated according to the following formula:

$$ROE_M = Z_n / (K_w + |L| - Z_n) \quad (5)$$

where:

ROE_M —modified net return on equity

Z_n —net profit from the analyzed year

K_w —equity

L —cumulated uncovered losses.

The indicator based on formula ROE_M has two advantages. The denominator is not expressed by a negative value, as a result there are no flaws in indicators (1) and (4). Moreover, the current year's result, which after all is not the capital employed yet, is eliminated from the equity.

Orlen	Z_n	618,000	-4,672,000	1,048,000	5,364,000	6,102,000	5,434,000
	K_w	23,135,000	16,302,000	17,846,000	22,168,000	27,565,000	31,634,000
	K_p	1,058,000	1,058,000	1,058,000	1,058,000	1,058,000	1,058,000
	S	428,000	428,000	428,000	428,000	428,000	428,000
PGNiG	Z_n	1,688,000	1,895,000	1,472,000	2,576,000	2,034,000	3,289,000
	K_w	22,969,000	23,780,000	23,738,000	25,228,000	26,033,000	28,833,000
	K_p	5,900,000	5,900,000	5,900,000	5,900,000	5,778,000	5,778,000
	S	5,900,000	5,900,000	5,900,000	5,778,000	5,778,000	5,778,000
SARE	Z_n	26	571	583	1439	173	1067
	K_w	2965	3584	9955	10,941	11,114	12,167
	K_p	222	222	222	229	229	229
	S	2216	2216	2216	2292	2292	2292
Wawel	Z_n	80,467	88,035	92,868	85,086	113,322	77,256
	K_w	372,172	429,356	491,578	550,308	630,704	670,238
	K_p	7499	7499	7499	7499	7499	7499
	S	1500	1500	1500	1500	1500	1500
Wikana	Z_n	-12,048	-13,620	-3159	-3048	-2916	-97
	K_w	42,133	40,852	38,051	35,149	32,233	32,137
	K_p	33,533	40,030	40,030	40,030	40,030	40,030
	S	167,666	167,666	20,015	20,015	20,015	20,015

Where: Z_n —net profit, K_w —equity, K_p —share capital, S —number of shares, Z_n , K_w , K_p —thousands PLN, S —thousands of shares.

Source: Authors' own elaboration based on GWP, 2013–2020.

Table 3. Cumulated undivided losses markings according to the formula (5)—thousands PLN

Company	Year					
	2013	2014	2015	2016	2017	2018
ABM Solid	-252,749	-252,022	-249,944	-248,598	-246,715	-245,796
Aplisens	0	0	0	0	0	0
Interbud Lublin	32,692	18,391	-7474	-30,230	-30,230	-31,837
Orlen	20,064,000	20,059,000	14,656,000	14,846,000	18,925,000	23,718,000
PGNiG	13,627,000	14,420,000	15,144,000	11,829,000	16,451,000	17,074,000
SARE	0	0	-575	13	13	-1

Wawel	-181	-181	-181	-181	-181	-181
Wikana	-40,577	-52,625	-66,245	-69,404	-72,452	-75,367

Source: Authors' own elaboration based on GWP, 2013–2020.

Table 4. Indicators of return on capital employed of selected companies in 2018

Company	Indicator				
	(1)	(2)	(3)	(4)	(5)
ABM Solid	0.045	-2.247	-9.668	2.987	-0.093
Aplisens	0.084	5.281	1.056	5.629	0.092
Interbud Lublin	0.635	-7.132	-0.714	42.366	-0.173
Orlen	0.172	5.136	12.696	11.452	0.207
PGNiG	0.114	0.569	0.569	7.605	0.129
SARE	0.088	4.659	0.466	5.846	0.096
Wawel	0.115	10.302	51.504	7.684	0.130
Wikana	-0.003	-0.002	-0.005	-0.201	-0.001

Source: Authors' own elaboration.

Indicator (1) for companies: Orlen, PGNiG, Aplisens, WAWEL, SARE, has similar values to those calculated according to formula (5). It applies to the profitability of the entire capital, i.e. it can be said that in standard cases it is a good measurement of the return on capital employed. Unfortunately, a problem appears when the case is not a standard one. First and foremost, it refers to the company with negative equity. In this case, ABM Solid is not profitable. However, due to negative equity, the indicator has the positive value, informing of the alleged profitability of the company and its good financial condition. But, as a matter of fact, in the analyzed year the company is not profitable. Similar situation is observed in the case of Interbud Lublin. Thus, indicator (1) is a good measurement instrument, but not a universal one. It presents a false picture of the company's condition when the company has negative equity.

The profitability of capital expressed by indicator (2) is free from the flaws characterizing indicator (1). Equity must always be positive (at least in the case of the capital company), so the indicator will always be positive for a profitable company and negative for an unprofitable company. However, it applies only to a part of the equity. In the case of half of the examined companies the share capital does not make even 10% of the equity. Therefore, the indicator ignores an immense part of the capital employed (mainly in the form of the share premium account or retained profits), sometimes yielding artificially high values.

Indicator (4) is practically identical with indicator (1). The only point of difference is that the equity in the denominator is substituted with 0.015 of that capital, being the critical value of return on capital at the time of indicator formulation. It has all the flaws of indicator (1).

Indicator (3), like indicator (2), is free from the flaws of indicator (1). As mentioned earlier, it does not apply to the value of the capital but rather to the number of shares, which may vary in the company and the number of shares does not reflect the amount of capital invested. This indicator may be used by the investor to analyze the ratio of the market value to the profit rather than to assess the company's financial standing.

In standard cases, indicator (5) only slightly deviates from indicator (1). However, in the case of ABM Solid Company and Interbud Lublin it correctly illustrates their huge unprofitability of capital. Thus, the indicator has all the advantages of instrument (1) and is much more universal.

The capital profitability measure is an important diagnostic variable taken into account in assessing the condition of companies, in particular when we compare them. Thus, the way it is defined has a significant impact on the correctness of the information contained in the synthetic measure.

The condition of companies was analyzed with the following indicator (Lisek, 2014):

$$m = \frac{1}{4} \left(\frac{X_1}{0,03} + \frac{X_2}{0,018} + \frac{X_3}{1,00} + \frac{1,2}{X_4} \right) \quad (6)$$

where:

m —company's condition evaluation

X_1 —return on assets (ROA): the ratio of the company's net profit to the value of its assets; informs about the company's capacity to generate profits and about the asset management effectiveness

X_2 —net return on equity: defined by one of formulas (1)—(5); shows how much profit was made by the company from the equity

X_3 —quick liquidity: the ratio of the value of the company's current assets reduced by inventories to the value of the company's current liabilities; shows what possibilities there are to settle the current liabilities with the most liquid company assets

X_4 —general level of debt: the value of the company's total liabilities to its total assets; describes in general the financing structure of the company's assets.

Indicator m is the arithmetic mean of the standardized diagnostic variables, whereby the standardization involves:

- in the case of the stimulants—division of the value of the diagnostic variable by the critical value, i.e. the lower limit of the diagnostic variable;
- in the case of the destimulants—multiplication of the inversed value of the diagnostic variable by the critical value, i.e. the upper limit of the diagnostic variable.

Owing to the method of variable standardization, indicator m shows directly if the analyzed company is in good or bad condition, rather than showing only its relative rank in the group of analyzed companies. The neutral value of this indicator equals one. If, for a particular company, the indicator is higher than one, it means that the company is in good condition; if the indicator is lower than one, the company is in bad condition.

This is due to the fact that there are usually no cumulative losses, and total equity changes in a manner correlated with the share capital. However, this usually happens. In a particular enterprise, there may be negative equity due to accumulated losses and then other measures of capital profitability, except for the formula (5) lead to erroneous conclusions.

Table 5. Pearson's linear correlation coefficient between measures of capital profitability of selected companies in 2018

		Indicator				
		(1)	(2)	(3)	(4)	(5)
Indicator	(1)	1.000	-0.559	-0.050	1.000	-0.521
	(2)	-	1.000	0.718	-0.559	0.840
	(3)	-	-	1.000	-0.049	0.464
	(4)	-	-	-	1.000	-0.521
	(5)	-	-	-	-	1.000

Source: Authors' own elaboration.

Table 6 presents synthetic indicator m in different variants (according to formulas (1)–(5), respectively) for variable X_2 .

Table 6. Synthetic indicator (m) for selected companies in 2018 with net return on equity calculated from formulas (1)–(5), respectively

Company	Value of indicator m				
	(1)	(2)	(3)	(4)	(5)
ABM Solid	-1.368	-20.467	-82.311	23.148	-2.518
Aplisens	8.621	51.929	8.621	54.824	8.686
Interbud Lublin	4.445	-60.288	-6.798	352.198	-2.291
Orlen	3.635	45.004	108.005	97.635	3.931
PGNiG	3.446	7.239	7.239	65.868	3.569
SARE	1.930	40.028	5.079	49.919	2.000
Wawel	4.598	89.489	4.598	67.674	4.723
Wikana	0.853	0.858	0.838	-0.799	0.871

Source: Authors' own elaboration based on GWP, 2013–2020.

The value of the synthetic indicator of the company's condition (m) based on the return on capital calculated from formula (1) is only insignificantly different from the indicator based on the return on capital calculated from formula (5) (Table 3). The synthetic indicators based on the indicators of return on capital calculated from formulas (2)–(4) are significantly different from the ones based on formulas (1) or (5). However, in non-standard cases the differences are substantial. In the case of ABM Solid the synthetic indicator based on the calculation of the return on capital from formula (5) is almost twice as high as the one based on the calculation of the return on capital from formula (1). On the other hand, the analysis of Interbud based on indicator m in one situation (when the return on capital is based on formula [4]) points to its

excellent condition and in another situation (when X_2 is based on formula [5]) demonstrates its poor financial standing. Taking into consideration the colossal loss and very negative equity, it is obvious that the correct conclusions can be drawn from the calculations based on formula (5).

Positions of the companies vary in rankings (Table 7) based on synthetic indicator m with the defining variants of X_2 , which is demonstrated by the estimated correlation coefficients of the ranks by Spearman (Table 8).

Table 7. Positions of companies by synthetic indicator m calculated from net return on equity defined by formulas (1)–(5), respectively

Company	Ranking				
	$R_{(1)}$	$R_{(2)}$	$R_{(3)}$	$R_{(4)}$	$R_{(5)}$
ABM Solid	3	8	7	1	7
SARE	5	5	3	4	4
Interbud Lublin	8	7	8	7	8
Wikana	7	6	6	8	6
Wawel	1	2	2	5	1
Aplisens	2	1	5	3	2
Orlen	4	3	1	2	3
PGNiG	6	4	4	6	5

Source: Authors' own elaboration.

In ranking (1) the third position is occupied by AMB Solid and in ranking (3) the first position is occupied by the same firm, the company which is classified on much lower positions in the other rankings. Remarkably, Orlen has an exceptionally low position in ranking (1). Regardless of the ranking, high positions were taken by Orlen and Aplisens. However, middle in the rankings are SARE and PGNiG. The last positions in the ranking are occupied by Interbud Lublin and ABM Solid.

Table 8. Correlation coefficient of ranks by Spearman for particular rankings

		Ranking				
		$R_{(1)}$	$R_{(2)}$	$R_{(3)}$	$R_{(4)}$	$R_{(5)}$
Ranking	$R_{(1)}$	1.000	0.794	0.733	0.830	0.879
	$R_{(2)}$	–	1.000	0.842	0.564	0.937
	$R_{(3)}$	–	–	1.000	0.636	0.903
	$R_{(4)}$	–	–	–	1.000	0.636
	$R_{(5)}$	–	–	–	–	1.000

Source: Author's own elaboration.

The following rankings are significantly correlated (p values < 0.05) (Kukuła, 1998, p. 190): $R_{(1)}$ and $R_{(4)}$, $R_{(2)}$, and $R_{(5)}$ as well as $R_{(3)}$ and $R_{(5)}$ (Table 8). It proves that in the comparative analysis of companies the method of definition of return on capital plays an important role.

If we assess the condition of companies in 2013–2018 using the measure, when we define the net return on equity ratio according to formula (5), we note that with the exception of 2014, Aplisens is the highest classified company, i.e. a company characterized by high profitability, high liquidity and low debt. Companies with a stable position, such as Orlen, PGNiG and Wawel, occupy high positions in the surveyed years. On the contrary, the rankings close Wikana, ABM Solid and Interbud Lublin companies, which had financial problems in the examined years.

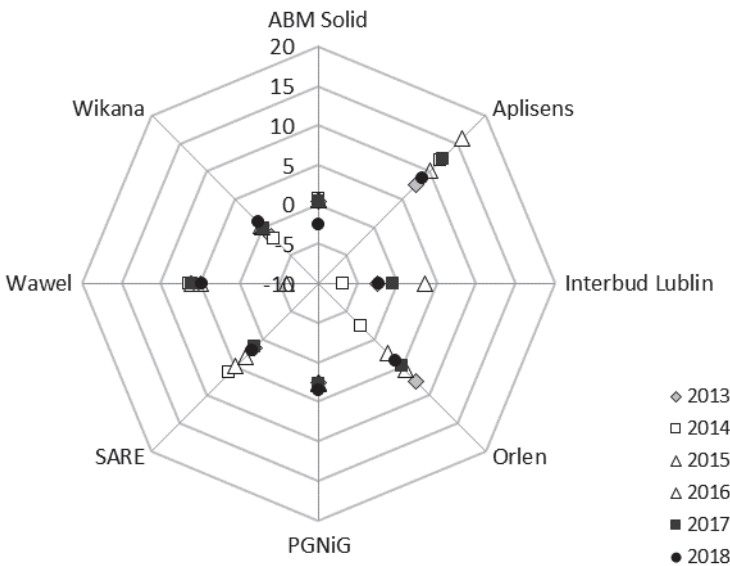


Figure 1. Measure values in 2013–2018

Note: The net profitability of the criteria sets is defined according to formula (5).

Source: Authors' own elaboration based on GWP, 2013–2020.

5. Conclusions

The indicator of return on capital employed calculated as a ratio of the net profit to the equity is a useful instrument, although only if there are no significant cumulated losses. However, it is not useful if the equity is negative. On the other hand, the profitability of share capital cannot be applied to the entire capital. What seems to be the best indicator is the return on equity adjusted by the undivided result from the previous years and the current year's result. This indicator applies to the entire capital employed, therefore it has all the advantages of the ROA indicator. Its positive value means that the company is profitable and its negative value shows that the company is unprofitable. It illustrates the return on the company's capital not

burdened with the current year's financial result. Therefore, it seems the best, universal indicator of the return on capital employed in the company.

By the same token, it seems justified to use the return of capital defined in this way in the construction of the synthetic indicator of the company's condition.

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Pomiar zyskowności kapitałowej jako element oceny kondycji finansowej przedsiębiorstwa

Abstrakt: Pomiar zyskowności kapitałowej przedsiębiorstwa jest ważnym elementem oceny jego kondycji. Odzwierciedla korzyści udziałowców firmy od jednostki zainwestowanego kapitału. Stanowi podstawową przesłankę do inwestowania w przedsiębiorstwo. Tym samym jest ważną zmienną diagnostyczną w konstrukcji syntetycznego miernika kondycji finansowej firm. Celem artykułu jest zaproponowanie uniwersalnego, użytecznego miernika zyskowności kapitałowej,

w pełni przydatnego do konstruowania miary oceny kondycji przedsiębiorstw. Zakłada się, że powinien on spełniać następujące postulaty: po pierwsze, dawać prawdziwy obraz sytuacji, nie zafałszowywać go, a po drugie, odnosić się do rentowności całego zainwestowanego kapitału. W pracy zastosowano metodę analizy merytorycznej, a także analizę empiryczną na przykładzie ośmiu spółek notowanych na Giełdzie Papierów Wartościowych w Warszawie (GPW).

Słowa kluczowe: rentowność kapitałowa, analiza finansowa, przedsiębiorstwo, miara syntetyczna

Evaluation of the effectiveness of early warning models on the example of enterprises operating in SEZ

Justyna Chmiel

University of Rzeszów, Poland
E-mail: j.chmiel@ur.edu.pl
ORCID: 0000-0002-3890-2785

Karolina Kozioł

University of Rzeszów, Poland
E-mail: kakoziol@ur.edu.pl
ORCID: 0000-0002-2195-6373

Rafał Pitera

University of Rzeszów, Poland
E-mail: rpitera@ur.edu.pl
ORCID: 0000-0001-9598-1240

Abstract: The article aims to verify the effectiveness of selected 10 models of discriminant analysis on the example of 30 enterprises operating in special economic zones: Mielec and Tarnobrzeg. The methodology applied for the research was an analysis of existing data and the use of discriminant analysis methods such as systematic review of literature, analysis of public data of the Ministry of Economy and financial data of enterprises (primarily financial statements). Analysis of companies belonging to the Mielec zone, SEZ Euro-Park Mielec and Tarnobrzeg Euro-Park Wisłosan was conducted on a sample of 30 enterprises, including 15 bankrupt and 15 termed “healthy”. The time horizon of the research was 2009–2017, verification was based on 10 early warning models. The conducted analyzes showed that some models correctly reflect the financial situation of the surveyed enterprises (e.g. Artur Hołda’s model—73.3% accurate forecasts), they also revealed the need to use multiple discriminant analysis models to thoroughly analyze the company’s financial situation—using only one lead model maybe to draw incorrect conclusions. The use of discriminatory models to assess the financial situation of enterprises is in many cases based on early warning methods. These methods are characterized by both advantages and certain limitations; one of the disadvantages is the rapid decline in the effectiveness of models due to constant changes in the economic conditions of market players. That is why models created several years ago may be less effective than newer methods. As for the advantages, it should be emphasized above all the simplicity of the use of such tools and unambiguous results—which in comparison to, for example, traditional indicator analysis, allow to avoid errors in the interpretation of results.

Keywords: discriminant analysis, company’s financial situation, early warning models, bankruptcy, enterprises in Poland

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Correspondence to:
Rafał Pitera
Uniwersytet Rzeszowski
ul. Ćwiklińskiej 2
35-601 Rzeszów, Poland
Tel.: +48 17 872 16 45

1. Introduction

One of the key efforts that contribute to the overall socio-economic development of the region and the country is to stimulate activities aimed at activating society, including unleashing their entrepreneurial potential. By creating appropriate conditions for the functioning of enterprises on the market, entrepreneurs have many tasks to accomplish. One of them concerns the minimization of labour costs in order to create a sustained (promising) company, generating long-term revenues. The authors focus their attention on enterprises that have decided to conduct business in Special Economic Zones. The reason for researching zone enterprises are the authors' scientific interests, as well as methods (forms) of zone companies' activities that efficiently attract foreign capital in the form of foreign direct investment (FDI). More often than off-zone companies they implement new technical and technological solutions, thus increasing the competitiveness of manufactured products and services rendered. The paper focuses on the Mielec zone, created in 1995, located in Mielec (SEZ Euro-Park Mielec), and the Tarnobrzeg Euro-Park Wisłosan, established in 1997, managed by ARP S.A. Branch in Tarnobrzeg, with its range covering as many as three voivodeships: Subcarpathian, Masovian, Lublin.

Research on business bankruptcy and early warning models have gained importance after a change from centrally planned economy to free market economy. There was a sharp increase in the number of enterprises that could not cope with the rules of the free market. The phenomenon of bankruptcy is intensifying or it is more noticeable by market participants during periods of recession, which is shaken by the financial policy, which may lead to the company's insolvency.

Taking into account the above transformations and phenomena, the article attempts to assess the effectiveness of selected models for forecasting bankruptcy of enterprises, SSE companies Europark Mielec and Tarnobrzeg Euro-Park Wisłosan, using ten discriminative models as the most popular tools.

The main intention of the authors is to examine enterprises located in Special Economic Zones. This choice was not accidental, because it is associated with the scientific interests of the authors, as well as with research relevance that occurs in both Polish and foreign literature. Increasingly, varied studies on the financial condition of enterprises could be found, as well as the use of early warning models for predicting bankruptcy. However, the specific properties of the surveyed enterprises are not always taken into account and many generalizations are applied. The authors asked themselves whether the models available in Polish literature (details later in the article) can be successfully used to study enterprises located in economic zones, or on the contrary—prove to be ineffective. The following article may be the beginning of research aimed at developing a discriminatory model dedicated to enterprises located in the SEZ.

The need for a good forecasting tool for the bankruptcy of Eastern European companies thus arises; several authors used neural networks to meet this need, including Darvasi (2010) and Dorneanu et al. (2011).

2. Literature review

Many types of prediction models have been formulated in the theory and practice of predicting bankruptcy in economic terms (legal bankruptcy). An exhaustive classification (McKee, 2000), characterizing the following types of procedures and models, has been presented by McKee. It presents itself as shown below:

- one-dimensional indicator models;
- multidimensional discriminant analysis;
- linear probability models;
- logit and probit models;
- decision trees;
- gambling models;
- expert systems;
- mathematical programming;
- neural networks;
- application of the theory of fuzzy sets and rough sets.

The first Polish discrimination model for forecasting bankruptcy was Elżbieta Mączyńska's model, where a multiplication model of simplified discrimination analysis was used to predict the bankruptcy of Polish companies (Mączyńska, 1994). The creation of the model was associated with the adaptation of the Edward I. Altman (1968) western model (or Z-score model) to the conditions of the Polish economy. It was Altman (1968), as a precursor of forecasting threats in the functioning of enterprises, that contributed to the dynamic development of early warning models.

In the literature on the subject, an often occurring case is the assignment, in an unauthorized manner, contrary to the methodology—of the value of universality (where economic conditions or industry specificity of enterprises included in the research sample of the model are ignored). Therefore, it is purposeful to periodically conduct diagnostic credibility of financial condition assessment models (Kitowski, 2013, p. 156).

Measures taken as part of the research route of bankruptcy prediction statistical models designate the taking up of the following analytical activities (Kaczmarek [ed.], 2012):

- identification of dependency of layout: company standing—threat of bankruptcy;
- susceptibility testing: level of threat of bankruptcy—abrupt changes in the determinants of company standing;
- testing of efficiency (identification and dynamic prediction methods);
- prospective analysis and assessment of the state of threat of bankruptcy.

It should be added that the methods of discriminant analysis are devoid of the main disadvantage of indicator analysis, namely the difficulty in explicitly assessing the financial situation of the company at a given moment.

According to Tomasz Korol, the most effective method in forecasting bankruptcy of companies among all statistical methods is multidimensional discrimination analysis (Korol, 2010, p. 158). At the same time, current literature studies show that there is not actually one correct model for assessing the threat of bankruptcy of an enterprise (Mączyńska and Zawadzki 2006, p. 228).

In the opinion of Feliks Wysocki and Agnieszka Kozera, the role of discriminatory analysis and early warning systems based on it is to make a comprehensive assessment of the company's financial condition and to reveal elements indicating the increasing risk of bankruptcy (Wysocki and Kozera, 2012, p. 169).

Popular models developed by Polish researchers in this area include: the model by Gajdka and Stos, the model by Mączyńska and the Poznań model, where the advantage of the models is a high percentage of accuracy of forecasts based on them (Bombiak, 2010, p. 145).

Summarizing, it is important that discriminant analysis (also known as Discriminant Function Analysis, DFA) is a powerful descriptive and classificatory technique developed by R. A. Fisher in 1936 (Fisher, 1936, pp. 178–188) to: (a) describe characteristics that are specific to distinct groups (called descriptive discriminant analysis); and (b) classify cases (that are individuals, subjects, participants) into pre-existing groups based on similarities between that case and the other cases belonging to the groups.

3. Research methodology

The starting point, or base for all other methods used in this article, was the analysis of existing data and discriminant analysis methods. In order to assess the predictive credibility of enterprises, a total of 30 financial data was collected. The collected data came from 15 bankrupt entities. The sample of failed enterprises includes enterprises operating in the industry and services sector. The opposite number of healthy enterprises in both sectors was collected as an opposite sample. All enterprises that were selected for the study according to current criteria functioned (went bankrupt) or still operate in special economic zones in the Subcarpathian Voivodeship. The number of enterprises that were selected for the study was dictated by the availability of financial data of bankrupt enterprises. In the case of such entities, it is much more difficult to reach financial statements that contain sufficiently complete information that can be used in the study. An additional difficulty was the fact that in the selection of individual enterprises, entities operating in special economic zones were sought.

Based on the collected financial data, early warning models were calculated for a period of 5 years. Based on a sample of 30 enterprises that declared bankruptcy in 2009–2017 and their healthy counterparts, the data included in the financial statements was reviewed and analyzed. The detailed sector membership is presented in Table 1.

Table 1. Classification of bankrupt enterprises covered by the survey according to the Polish Classification of Activities

Description	Polish Classification of Activities	Number of entities used in the study	
		Failed enterprises	Healthy enterprises
Metal production	24	1	1
Manufacture of fabricated metal products, except machinery and equipment	25	2	2
Manufacture of other transport equipment	30	1	1
Other production	32	2	2
Repair, maintenance and installation of machinery and equipment	33	1	1
Activities related to the collection, processing and disposal of waste; raw material recovery	38	1	1
Wholesale trade, except of motor vehicles	46	1	1
Construction works for buildings	41	3	3
Specialized construction works	43	1	1
Warehousing and support services for transportation	52	2	2
TOTAL		15	15

Source: Authors' own elaboration.

Ten discriminatory models called early warning models were used in the study. These models are the most commonly used methods among statistical tools when forecasting bankruptcy of enterprises (Aziz and Dar, 2006, pp. 18–33). The selection of models was dictated by several factors. The most popular and most frequently used methods were selected.

Foreign models were ignored in the selection. According to the position of most people dealing with the subject, models constructed in other countries were based on other conditions. Therefore, their use in the conditions of the Polish economy should take place only after prior adaptation. Such views include accepting the following authors: Rogowski (1999), Zaleska (2002), Nowak (2005), Mączyńska and Zawadzki (2006), Korol (2010), Kitowski (2011). Therefore, no foreign models, often as popular as domestic models (e.g. E. Altman's models), were not used in the study. In addition, due to the fact that companies from various industries were selected for the sample of enterprises, universal models were used for the study, i.e. dedicated to use in many industries. Hence, models that apply only to a particular industry (e.g. Robert Jagiełło discriminative models [Jagiełło, 2013], or Sławomir Juszczyk's and Rafał Balina's models [Juszczyk and Balina, 2014] or provinces—Małgorzata Kasjaniuk models [Kasjaniuk, 2006], were not used in the study). Table 2 shows the individual models in detail.

Table 2. Characteristics of selected early warning models

No.	Model	Formula for a given model
1.	Model by Mączyńska	$ZEM = 1.5W_1 + 0.08W_2 + 10.0W_3 + 5.0W_4 + 0.3W_5 + 0.1W_6$ $W_1 = (\text{Gross profit} + \text{Depreciation}) / \text{Liabilities}$ $W_2 = \text{Assets} / \text{Liabilities}$ $W_3 = \text{Gross profit} / \text{Assets}$ $W_4 = \text{Gross profit} / \text{Sales}$ $W_5 = \text{Stocks} / \text{Sales}$ $W_6 = \text{Sales} / \text{Assets}$ $ZEM < 0$ —company in danger of bankruptcy $0 < ZEM < 1$ —poor financial condition but no threat of bankruptcy $1 = < ZEM < 2$ —good financial condition $2 = < ZEM$ —very good financial condition
2.	Model by Gajdka and Stos	$ZGS = 0.7732 - 0.0856W_1 + 0.00077W_2 + 0.9221W_3 + 0.6536W_4 - 0.5947W_5$ $W_1 = \text{Sales} / \text{Annual assets}$ $W_2 = (\text{Short-term average annual liabilities} \times 360) / \text{Production cost}$ $W_3 = \text{Net profit} / \text{Assets}$ $W_4 = \text{Gross profit} / \text{Sales}$ $W_5 = \text{Liabilities} / \text{Assets}$ $ZGS < 0.45$ —enterprise threatened with bankruptcy $ZGS > 0.45$ —enterprise in good financial condition
3.	Model by Hadasik	$ZDH = 2.3626 + 0.3654W_1 - 0.7655W_2 - 2.4043W_3 + 1.5908W_4 + 0.0023W_5 - 0.0128W_6$ $W_1 = \text{Current assets} / \text{Current liabilities}$ $W_2 = (\text{Current assets} - \text{Inventories}) / \text{Current liabilities}$ $W_3 = \text{Total liabilities} / \text{Total assets}$ $W_4 = (\text{Current assets} - \text{Current liabilities}) / \text{Total liabilities}$ $W_5 = \text{Receivables} / \text{Sales revenues}$ $W_6 = \text{Inventories} / \text{Sales revenues}$ $ZDH > 0$ —good financial condition $ZDH < 0$ —bankruptcy
4.	Model by Wierzba	$ZDW = 3.26W_1 + 2.16W_2 + 0.3W_3 + 0.69W_4$ $W_1 = (\text{Operating profit} - \text{Depreciation}) / \text{Total assets}$ $W_2 = (\text{Operating profit} - \text{Depreciation}) / \text{Sales}$ $W_3 = \text{Current assets} / \text{Total liabilities}$ $W_4 = \text{Working capital} / \text{Assets}$ $ZDW > 0$ —good financial condition $ZDW < 0$ —bankruptcy
5.	Model by Hołda	$ZAH = 0.605 + 0.681W_1 - 0.0196W_2 + 0.00969W_3 + 0.000672W_4 + 0.157W_5$ $W_1 = \text{Current Assets} / \text{Short-term liabilities}$ $W_2 = \text{Liabilities} / \text{Assets} \times 100$ $W_3 = \text{Net profit} / \text{Annual assets} \times 100$ $W_4 = (\text{Average current short-term liabilities} \times 360) / \text{Costs of sold products, goods and materials}$ $W_5 = \text{Sales} / \text{Annual assets}$ $ZAH > 0$ —good financial condition $ZAH < 0$ —bankruptcy $-0.3 \leq ZAH \leq 0.1$ —“area of uncertainty”, no determination of the financial situation

6.	Poznań model	$Z = -2.368 + 3.562 W_1 + 1.588 W_2 + 4.288 W_3 + 6.719 W_4$ $W_1 = \text{Net profit} / \text{Assets}$ $W_2 = (\text{Current assets} - \text{Inventories}) / \text{Short-term liabilities}$ $W_3 = \text{Fixed capital} / \text{Assets}$ $W_4 = \text{Profit on sales} / \text{Revenue from sales and equalized to them}$ $Z > 0$ —good financial condition
7.	Model by Appenzeller and Szarzec	$ZDA = 0.819 W_1 + 2.567 W_2 - 0.005 W_3 + 0.0006 W_4 - 0.0095 W_5 - 0.556$ $W_1 = \text{Net profit} / \text{Assets}$ $W_2 = (\text{Current Assets} - \text{Inventories} - \text{Short-term prepayments}) / \text{Short-term liabilities}$ $W_3 = \text{Fixed capital} / \text{Assets}$ $W_4 = \text{Profit on sales} / \text{Revenue from sales and equalized to them}$ $W_5 = \text{Liabilities} / \text{EBITDA}$ $ZDA > 0$ —good financial condition $ZDA < 0$ —bankruptcy
8.	Model by Prusak	$ZBP = 1.438 W_1 + 0.188 W_2 + 5.023 W_3 - 1.871$ $W_1 = (\text{Net profit} + \text{Depreciation}) / \text{Liabilities}$ $W_2 = \text{Operating costs} / \text{Short-term liabilities}$ $W_3 = \text{Profit on sales} / \text{Assets}$ $ZBP \geq -0.295$ —good financial condition $ZBP < -0.295$ —bankruptcy $-0.7 \leq ZBP \leq 0.2$ —“uncertainty area”, no definition of the financial situation
9.	Model of the Institute of Economic Sciences of the Polish Academy of Sciences “G” by Mączyńska and Zawadzki	$ZEM_2 = 9.498 W_1 + 3.566 W_2 + 2.903 W_3 + 0.452 W_4 - 1.498$ $W_1 = \text{EBIT} / \text{Assets}$ $W_2 = \text{Equity} / \text{Assets}$ $W_3 = (\text{Net profit} + \text{Depreciation}) / \text{Liabilities}$ $W_4 = \text{Current Assets} / \text{Short-term liabilities}$ $ZEM_2 > 0$ —good financial condition $ZEM_2 < 0$ —bankruptcy
10.	Model by Maślanka	$ZTM = -0.41052 + 1.59208 W_1 + 4.35604 W_2 + 5.92212 W_3$ $W_1 = \text{Working capital} / \text{Assets}$ $W_2 = \text{Cash from operations [segment A with cash flow]} / \text{Assets}$ $W_3 = (\text{Profit from operations} + \text{Depreciation}) / \text{Liabilities}$ $ZTM > 0$ —good financial condition $ZTM < 0$ —bankruptcy

S o u r c e: Authors' own elaboration based on: Mączyńska, 1994, pp. 42–45; Gajdka and Stos, 1996, pp. 56–65; Hadasik, 1998, pp. 22–37; Wierzbza, 2000, pp. 79–104; Hołda, 2001, pp. 306–310; Hamrol, 2004, pp. 34–38; Appenzeller and Szarzec, 2004, pp. 120–128; Prusak, 2005, p. 151; Mączyńska and Zawadzki, 2006, pp. 225–228; Maślanka, 2008, pp. 206–208, pp. 230–241.

4. Research findings/ results

Based on a sample of 30 companies, 10 models using the linear discriminant function were verified. The calculations were made for 5 research periods, of which the article presents the results only for the last study period. It was the year in which the “bankrupt” enterprises announced liquidation. Tables 3 and 4 present the results of the assessment of the financial condition of enterprises made using selected discriminant analysis models. The “B” designation in the table refers to bankrupt enterprises, while the “H” designation refers to healthy enterprises.

Table 3. Presentation of the results of the survey for the last period analyzed
(year of declaration of bankruptcy)

Model Enterprise	Model by Mączyńska	Model by Gajdka and Stos	Model by Hadasik	Model by Wierzba	Model by Hołda	Poznań model	Model by Appenzeller and Szarzec	Model “G” IE PAS	Model by Prusak	Model by Maślanka
B1	4.71	-1.1	-0.821	-1.457	-4.180	0.950	0.858	-1.868	0.819	-3.311
B2	-1.100	0.816	2.103	0.602	1.607	0.625	-0.914	0.874	0.514	3.707
B3	2.516	-1.082	0.519	1.157	-2.889	-1.059	0.785	0.879	-1.868	-0.583
B4	0.966	0.702	0.714	0.489	1.308	0.826	1.978	0.527	0.874	1.065
B5	-3.265	-2.807	-1.872	-3.327	-3.895	-2.337	-0.884	-0.878	-1.879	-0.747
B6	-0.924	0.735	-0.705	2.017	0.613	-0.684	-3.912	-1.245	-0.827	-2.956
B7	1.168	3.959	-1.442	0.718	-0.948	-2.818	-2.361	0.914	0.973	-2.415
B8	-2.078	-1.641	0.942	-2.468	-3.577	0.928	-1.140	-0.643	-1.955	-0.479
B9	0.729	0.908	0.712	1.457	3.449	0.885	0.288	-3.544	0.938	1.008
B10	-0.513	1.094	1.231	1.730	-0.549	-0.119	-2.994	-0.592	1.736	-2.602
B 11	-0.326	-2.402	0.655	-0.524	1.375	1.983	2.027	0.679	0.956	-1.249
B12	-0.326	-0.833	-1.502	-0.939	-1.401	-0.699	-0.669	-1.631	1.528	-2.536
B13	0.961	0.717	-0.799	-1.278	-1.521	0.379	-1.192	1.144	-1.629	0.725
B14	-1.298	-1.871	0.516	-2.186	-2.727	-1.284	0.278	-0.572	-1.833	-1.092
B15	-2.167	-0.819	-1.298	0.728	-0.598	-2.163	-0.922	-1.328	-2.199	-0.591
H1	1.715	0.982	2.311	-0.717	3.112	1.332	0.713	0.933	1.711	1.291
H2	-0.322	1.114	-0.799	-2.133	1.771	1.225	1.299	0.567	0.912	0.781
H3	1.819	-0.899	-1.299	-0.483	0.776	4.311	0.911	1.234	3.719	1.992
H4	1.922	2.112	3.144	1.257	1.387	-0.992	-1.223	3.991	3.712	3.198
H5	2.392	0.994	0.566	2.388	2.311	1.771	-0.931	-0.783	-2.392	-0.921
H6	7.192	3.282	0.927	2.109	3.134	3.189	3.216	3.193	-1.781	1.732
H7	-0.931	1.299	-1.922	3.671	-0.478	-0.766	-0.299	1.872	-1.253	-0.924
H8	3.293	-0.879	2.133	-0.911	-0.989	-1.348	0.597	1.739	-3.839	0.782
H9	5.133	3.221	0.988	1.673	1.421	3.288	-0.577	-1.829	0.938	0.663
H10	-2.193	-0.989	-0.919	0.344	0.577	1.284	1.221	-0.799	0.821	-0.582
H11	-0.993	1.226	0.566	-0.388	1.654	2.576	-0.719	1.788	-0.928	-1.241
H12	3.453	-1.244	-1.238	1.922	-0.799	3.199	2.399	2.492	2.183	3.219

H13	2.333	1.024	-1.991	0.799	1.323	-0.772	1.588	2.189	-1.817	2.396
H14	1.348	-2.114	3.122	2.101	3.918	-0.332	-0.280	-0.922	-0.982	3.457
H15	3.477	0.799	3.577	-0.677	1.711	4.312	2.711	3.782	1.293	-1.294

S o u r c e: Authors' own elaboration based on the financial statements of the entities surveyed from the EMIS website.

In the examined period, the A. Hołda model had the highest prognostic reliability in 73.3% correctly diagnosed financial condition of enterprises (22 correct and 8 incorrect assessments, respectively). The second model with the highest prognostic reliability was the one by Maślanka with 70% forecast effectiveness (21 correct and 9 incorrect results). The third position was taken by two models by Mączyńska with 66.7% efficiency (20 correct and 10 incorrect assessments). Table 4 presents the classification of all models based on the relevance of the results for the last year of the study.

Table 4. Early warning model results classified by the accuracy of the results obtained for the last year of the study

Model	Forecast accuracy (in %)	Number of correct grades	Number of incorrect ratings	
			First degree error	Second degree error
Model by Hołda	73.3	22	3	5
Model by Maślanka	70.0	21	5	4
Model of IE PAS by Mączyńska and Zawadzki	66.7	20	4	6
Model by Mączyńska	66.7	20	4	6
Poznań model (Hamrol)	60.0	18	5	7
Model by Appenzeller and Szarzec	60.0	18	6	6
Model by Gajdka and Stos	60.0	18	5	7
Model by Hadasik	53.3	16	6	8
Model by Wierzba	53.3	16	6	8
Model by Prusak	50.0	15	7	8

S o u r c e: Authors' own elaboration based on the survey results.

The obtained results show the classification of the models used by the authors in the study. Noteworthy is the fact that each of the 10 models has obtained prognostic reliability of 50% and more. However, it should also be added that in the same period none of the models was more than 80% effective. In most models, the second degree error was more common than the

1st degree. Only in one model it was opposite. In one model, the number of incorrect diagnoses of the first and the second kind was the same.

5. Discussion

The use of discriminatory models to assess the financial situation of an enterprise in the context of early warning methods, in addition to many advantages, also has a number of limitations. One of the disadvantages is the occurrence of outdated phenomena, which results from constant changes in the economic conditions of entities operating on the market. Hence, models developed several years ago may fail, thus hindering a reliable forecast of the financial situation of the twenty-first-century enterprises.

An important issue from the point of view of the methods used for testing is the complex construction of models, which is due to the differing diagnostic parameters taken into account in the models and omission of qualitative factors. This results in discrepancies in the financial assessment of economic entities (economic result).

The fact that discriminatory models are highly useful cannot be discussed. The models mostly include data from enterprise balance sheets and profit and loss accounts. The reason for the incorrect financial standing of enterprises may be the so-called clever accounting procedures (including creative accounting), or even the sale of company assets resulting in only a short-term increase in cash.

The study conducted by the authors is one of the few among many such scientific publications. For example, many science employees use early warning models to examine the financial condition of enterprises or verify the effectiveness of forecasts, but in this area of scientific research there is still a scientific gap. Enterprises outside the SEZ are mainly surveyed.

Only Wojciech Lichota in the article *Verification of the effectiveness of prediction of selected models of discriminant analysis on the example of enterprises operating in special economic zones in Poland and others* (Lichota, 2018) undertook a similar task by testing zone enterprises. Other authors, e.g. Paweł Antonowicz (2010), Emilia Grzegorzewska and Henryk Runowski (2008) or Dariusz Zarzecki (2003)—rated early warning models but not on enterprises located in the SEZ.

6. Conclusion

Based on the conducted research, it can be concluded that the discriminatory models used in the study reflect the financial situation of enterprises well (73% level). It is important to note that some models indicated a good financial situation of the company, while others indicated a weak financial situation. For example, in most models, the 2nd degree error was more common. The reverse situation took place only in one model (model by Maślanka). There was also a case in one of the models, where the number of incorrect diagnoses of the 1st and 2nd kind was the same (model by Appenzeller and Szarzec).

Conducting an effective analysis of the financial situation (i.e. one that will give meaningful results) based on discriminatory models requires the use of at least several models, hence the authors of the article used calculations of 10 models. The highest predictive reliability

was the model by Hołda, which in 73.3% correctly diagnosed the state of financial condition of enterprises (correct 22/ incorrect 8).

The conducted research showed that universal discriminatory models can also be applied to enterprises operating in Special Economic Zones. The results do not differ significantly from surveys that were conducted on a sample of enterprises operating outside the zone. It could therefore be concluded that the fact of operating in enterprises in the Special Economic Zone does not affect the lower efficiency of the models used. It is worth adding, however, that this article should be treated as an introduction to further research and analysis. The authors' intention is to create a model that would reflect the specificity of enterprises operating in the SEZ. The above study is an attempt to draw attention to the still existing research gap in this area. According to the authors, it is worth focusing on adapting the existing early warning models to changing economic conditions, so that their effectiveness and prediction of bankruptcy is as high as possible.

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Ocena skuteczności modeli wczesnego ostrzegania na przykładzie przedsiębiorstw działających w specjalnych strefach ekonomicznych

Abstrakt: Celem artykułu jest weryfikacja skuteczności wybranych dziesięciu modeli analizy dyskryminacyjnej na przykładzie 30 przedsiębiorstw działających w specjalnych strefach ekonomicznych w Mielcu i w Tarnobrzegu. W badaniu zastosowano metody analizy danych i analizy dyskryminacyjnej. Wykorzystano dane publicznie dostępne, pochodzące głównie ze sprawozdań finansowych przedsiębiorstw. Badanie przeprowadzono na próbie 30 przedsiębiorstw (w tym 15 upadłych i 15 określanych jako „zdrowe”), działających w strefach Euro-Park Mielec i Euro-Park Wisłosan Tarnobrzeg. Zakres czasowy badań to lata 2009–2017. Przeprowadzone analizy wykazały, że niektóre modele w prawidłowy sposób odzwierciedlają sytuację finansową badanych przedsiębiorstw (np. model Artura Hołdy – 73,3% trafnych prognoz), ujawniły także potrzebę zastosowania wielu modeli analizy dyskrymina-

cyjnej do dokładnej analizy sytuacji finansowej przedsiębiorstwa – użycie jednego tylko modelu prowadzi może do wyciągania nieprawidłowych wniosków. Wykorzystanie modeli dyskryminacyjnych do oceny sytuacji finansowej przedsiębiorstw w wielu przypadkach opiera się na metodach wczesnego ostrzegania. Wspomniane metody charakteryzują się zarówno zaletami, jak i pewnymi ograniczeniami; jedną z wad jest szybki spadek skuteczności modeli ze względu na ciągłe zmiany warunków ekonomicznych podmiotów działających na rynku. Dlatego modele powstałe przed kilkunastoma laty mogą być mniej skuteczne niż odpowiednio nowsze metody. Co do zalety, to podkreślić należy przede wszystkim prostotę zastosowania takich narzędzi oraz jednoznaczne wyniki – które w porównaniu na przykład do tradycyjnej analizy wskaźnikowej pozwalają na uniknięcie błędów w interpretacji wyników.

Słowa kluczowe: analiza dyskryminacyjna, sytuacja finansowa przedsiębiorstwa, modele wczesnego ostrzegania, bankructwo, przedsiębiorstwa w Polsce

TOURISM AND PHYSICAL RECREATION

City break as a form of urban tourism

Agata Balińska

Warsaw University of Life
Sciences—SGGW, Poland

E-mail: agata_balinska@sggw.edu.pl
ORCID: 0000-0002-8777-9955

Abstract: The aim of this paper is to investigate the attractiveness of city break trips as a form of urban (cognitive) tourism. The study focuses on the following research questions: What factors influence the popularity of city break trips? Which cities are most often chosen as destinations for short-term holidays? What factors determine the choice of these cities? Which city attractions appeal to city break visitors? How are city breaks organized? These research questions were investigated through desk-based analysis of literature on urban tourist destination attractiveness and the determinants of city break trend development as well as an online diagnostic survey which involved 184 respondents actively participating in tourism. The study shows that the main reasons for taking a city break trip is the desire to “escape from everyday life routine”, “sightseeing” and “relaxation”. Cities in Poland were more popular destinations than cities abroad and they were usually reached by train or car. City break visitors most often visited historical sites and looked for off-the-beaten-track places. The main reason for choosing a particular destination was the desire to see something new. Research topic and issues testify to the originality of the selected research area.

Keywords: city break, tourism, cities, destination, destination attractiveness

1. Introduction

Already in ancient times cities were places of tourist reception. They were home to temples and amphitheatres and often enjoyed vibrant cultural life. However, despite the long history of the phenomenon, it is difficult to provide a concrete, unequivocal definition of the term *urban tourism*. G. Ashworth and S. J. Page, M. Mika, M. Kachniewska (Ashworth and Page, 2011, pp. 1–15; Kachniewska, 2012, pp. 49–52; Mika, 2007, pp. 319–328) also address the problem of defining this term. Kowalczyk distinguishes between urban tourism and tourism in urban areas and defines the former as “tourism

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Correspondence to:
Agata Balińska
Szkoła Główna Gospodarstwa
Wiejskiego w Warszawie
Wydział Ekonomiczny
ul. Nowoursynowska 166
02-787 Warszawa, Poland
Tel.: +48 22 593 41 54

whose purpose is to visit and get to know the city treated as a cultural heritage and recognized as an indivisible element of a tourism space” (Kowalczyk, 2005, p. 157). Due to their specific features, cities are destinations attracting various forms of tourism: cultural tourism, business travels, entertainment tourism, hobby tourism (including passive sport tourism or festival tourism), post-industrial tourism, religious tourism and sightseeing. Unlike peripheral areas, cities are destinations of short trips, which has been noted by Z. Kruczek and P. Zmysłony (2010, pp. 12–31). Obviously, the city’s attractiveness plays an important role in stimulating tourist demand. In a case of a tourist who is keen on exploring the city, attractiveness will consider different elements than in a case of a business tourist. Researchers have identified the main components of cities’ attractiveness as tourist destinations (Mika, 2007, p. 320; Esteban, 2017, pp. 22–58; Romão et al., 2018, pp. 67–75; Boivin and Tanguay, 2019, pp. 67–79; Nicoletti et al., 2019): architecture and urban layout of the city, including both historical and modern districts, cultural facilities (theatres, cinemas, museums, galleries), sacred architecture, ethnic districts, conference and shopping centres, entertainment and sports facilities, food places, transport hub (e.g. port, airport), scientific and academic potential (colleges, universities), festivals, city atmosphere.

Trips to cities are usually short-term (max 3 nights) and are extra leisure activity (they do not replace regular holidays) usually taken outside the tourist season. Due to their length and character, they are increasingly called city breaks. The term is defined differently. M. Awedyk, M. Makarewicz and J. Weltrowska define it as “relatively short, usually weekend trips outside the home country to fashionable metropolises, with particular emphasis on capital cities, combining relaxation with sightseeing and cultural tourism, usually organized independently by a tourist, with relatively low budget” (Awedyk, Makarewicz and Weltrowska, 2013, p. 12). The definition of a city break most widely used in the literature is the one proposed by J. Trew and N. Cockerell, who use this term to describe a short leisure trip to one city or town, with no overnight stay at any other destination during the trip (Trew and Cockerell, 2002, p. 86). City break is often considered part of weekend tourism. We also note this in the approach of the Ministry of Sport and Tourism (from 18 November 2019, the Ministry of Development), which was the organizer of the seminar entitled “How to sell a weekend? City break trends” (MSiT, 2015; see also: MSiT, 2016–2019; MSiT, 2019).

The conditions for the development of city break trips are very diverse, and the most important include (Prylińska and Ratkowska 2009, pp. 4–5; Szymkowiak, 2014, pp. 136–152; Charterina and Aparicio, 2015, pp. 71–82; Gralak, 2016, pp. 23–34):

- fashion for short tourist trips;
- development of means of transportation (especially by air—more flight connections, low-cost airlines);
- development of Internet services enabling tourists to quickly obtain information and make reservations;
- changes in the organization of work (remote working);
- socio-cultural changes (non-working days in the form of religious and secular holidays);
- flexibility in taking leave (leave on demand);
- increased wealth status of the society;

- increased cooperation between people sharing access to goods (sharing economy), e.g. couchsurfing, Airbnb, BlaBlaCar;
- growing popularity of social media, which are a source of inspiration and information;
- development of group shopping portals;
- increased availability of hotel accommodation;
- increased number of households with double income (both partners are professionally active);
- tourists seeking new and unique experiences without compromising high standard of services;
- new tourist attractions, e.g. interactive museums, cultural and scientific centres (e.g. Copernicus Science Centre in Warsaw).

The factors driving city break trend are both economic and non-economic (mainly social) in character. Local government authorities, associations and governmental agencies are also involved in the development of this form of recreation. The examples include: Half-Price Weekend—organized by the Ministry of Sport and Tourism (from 18 November 2019, the Ministry of Development), Half-Price Poznań—an offer by a tourist organization, or Fall in Love with Warsaw—a campaign run by the capital's authorities.

City break is not only an interesting socio-economic phenomenon, but also a phenomenon worth academic investigation. Unfortunately, the research in this field seems insufficient, which prompted the author to undertake a study in this area.

2. Assumptions for the research and results

2.1. Aim and methods

The aim of this paper is to investigate the attractiveness of city break trips as a form of urban (cognitive) tourism. The study focuses on the following research questions: What factors influence the popularity of city break trips? Which cities are most often chosen as destinations for short-term holidays? What factors determine the choice of these cities? Which city attractions appeal to city break visitors? How are city breaks organized? The questions, although indirectly stated, took into account the most important elements of tourism attractiveness (touristic assets, transportation accessibility, touristic infrastructure and the abstract perception of appeal).

The study used a desk research method and a diagnostic survey method. The survey involved an online questionnaire which was made available through social media in the first quarter of 2018 and 184 respondents, actively practicing tourism, participated in the survey. The questionnaire was conducted on Survio platform. The survey included 12 questions and respondents' particulars. Closed questions, semi-closed questions, opened questions, questions with Likert scale and descriptive scale were used. Both at the stage of preparing the survey and discussion of results the method of netography was applied to analyze available information (also the results of scientific research). The collected material also was used in the construction of the research tool.

The collected material was subjected to quantitative and qualitative analysis. In order to verify the statistical relationships between the sex, age and place of residence of the respondents and the determinants of using city break, the Mann–Whitney U Test was used. The test was also used to look for relationships between socio-demographic variables and the most-watched attractions.

2.2. Results

The empirical research was conducted on a sample of 184 respondents. The sample was dominated by women, people aged 19–24, with secondary education, from large cities, who mostly viewed their wealth status as good (Table 1). This respondents' profile is unfortunately typical for online surveys, specifically those which take into account social media.

Table 1. Profile of the respondents

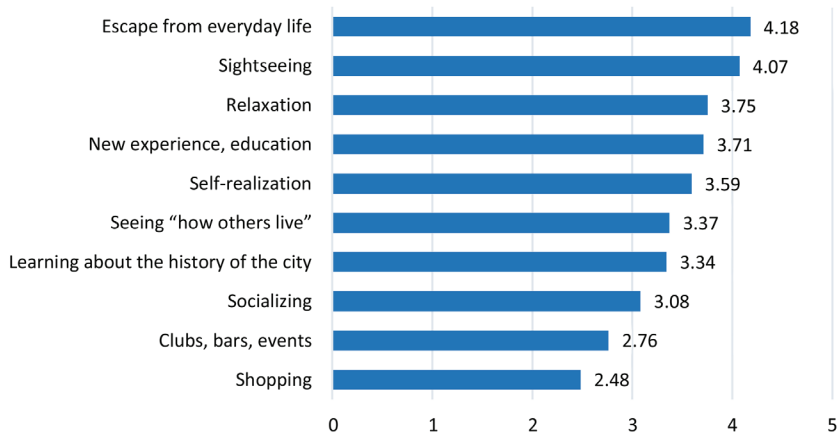
Characteristics of respondents	Number of respondents (in %)
Gender:	
Women	84.2
Men	15.8
Age:	
17–18	5.4
19–24	77.2
25–30	14.1
31≤	3.3
Education:	
Secondary	51.6
Tertiary	42.9
Other	5.5
Place of residence:	
City of over 200,000 residents	68.5
City of 50,000–200,000 residents	7.6
City up to 50,000 residents	12.5
Village	11.4
Assessment of own wealth status:	
Very good	14.1
Good	47.3
Average	37.0
Rather bad	1.6
Participation in tourism:	
Every few years	4.4
1–2 times a year	17.4
3–4 times a year	46.7
5 times a year minimum	31.5

Source: Author's own elaboration.

The frequency of respondents' participation in tourism was quite high, as much as 78.2% declared a trip at least three times a year (it is due to the way of reaching the respondents). Interestingly, there was no statistically significant relationship between the frequency of travels and other socio-demographic variables, including the declared (perceived) wealth status.

The research focused on participation in city break travels. Most respondents took such trips three or more times a year (51.6%) or twice a year (23.9%). People taking a city break holiday once a year accounted for 16.3%, and once every two years or less often only 8.2%. These answers were confirmed by responses to the question about the duration of the trips. Almost $\frac{3}{4}$ of the respondents (65.2%) travelled regardless of the season, 26.1% mainly in summer, 5.4% in spring and some individuals in winter and autumn.

Various factors motivated respondents to take city break trips. Their rank varied, as illustrated by Figure 1.



Note: Scale 1–5, where 5 means “the most important”.

Figure 1. Ranking of factors motivating tourists to take city break holiday

Source: Author's own elaboration based on the research.

“Escape from everyday life”, “sightseeing” and “relaxation” were the key motives to take a city break trip. Shopping, enjoying clubs and parties were the least important motives (Figure 1). These results are partly in line with the study carried out by G. Dunne et al. (2007, p. 103). In their research, the “escape” motive also came first, but the second one was “socializing”, which in our study featured in a lower position. There was no statistically significant difference, as measured by the Mann–Whitney U Test (Z), between the importance of city break travel determinants (shown in Figure 1) and the gender or age of respondents. However, a statistically significant difference was noted between the place of residence and the

“escape” motive—people living in the largest cities are more likely to “escape” from their place of residence than residents of small towns ($Z = 0.511, p = 0.03$).

The respondents most often visited large Polish cities, i.e. Trójmiasto (52.7%), Krakow and Wrocław (47.8% each), Zakopane (20.1%), Poznań (19.6%), Toruń (17.9%), Łódź (11.4%) and Warsaw (9.8%), as well as a small but very popular town—Kazimierz Dolny (8.7%). As for cities abroad, respondents most often chose Prague (32.6%), Berlin (26.1%), Paris (23.6%), London (16.8%), Barcelona (16.3%), Vienna (13.6%), Rome (13.0%) and Budapest (11.4%). These are the capitals of European cities, well-connected with major Polish cities. They are also cities heavily burdened by tourist traffic which has negative effects (Bouchon and Rauscher, 2019, pp. 598–619). The question about travel destinations leads to another question about what factors determined their choice. The motives, as declared by the respondents, are presented in Table 2.

Table 2. Influence of individual motives on the selection of city break destination

Motives	Influence (in %)		
	decisive	medium	no influence
Interest in new destinations abroad	34.2	37.0	28.8
Interest in new destinations in Poland	32.1	52.2	15.7
Return to well-known places in favourite destinations	27.7	58.2	14.1
Friends' recommendation	14.1	46.6	39.3
Travel agent's offer	5.4	12.0	82.6

Source: Author's own elaboration based on the research.

The need to see new places home or abroad was viewed as decisive (Table 2). Almost one in three respondents decided to return to already known places. Travel agents' offers had the lowest influence on the decision, which may come as a surprise as more and more tour operators are offering this type of holiday.

The trips were primarily of a sightseeing nature, which was confirmed by the indications of attractions most frequently visited during city break holiday (Table 3).

Table 3. City attractions visited on city break trips

Attraction	Frequency (in %)			
	always	often	occasionally	never
Historical sites	47.3	39.1	11.9	1.7
Off-the-beaten-track places	33.4	42.1	22.3	2.2
Festivals, events related to local culture and history, e.g. Oktoberfest	25.5	41.9	26.6	6.0
Museums, art galleries, exhibitions	21.8	40.2	32.6	5.4
Educational places, e.g. offering interactive workshops/ classes	21.2	48.9	26.6	3.3
Music festivals	12.5	23.4	40.2	23.9
Shopping centres	7.6	23.9	42.4	26.1
Theatre, cinema	3.8	19.0	48.4	28.8
Clubs	6.0	22.0	35.6	36.4

Source: Author's own elaboration based on the research.

Respondents indicated that the most visited attractions are historical sites and off-the-beaten-track places. Attractions like clubs, cinemas, theatres and shopping centres were rarely or never chosen.

There was no statistically significant difference between the most-visited places and the socio-demographic variables of the respondents.

The study also investigated the means of transportation and accommodation used by the respondents (Figure 2).

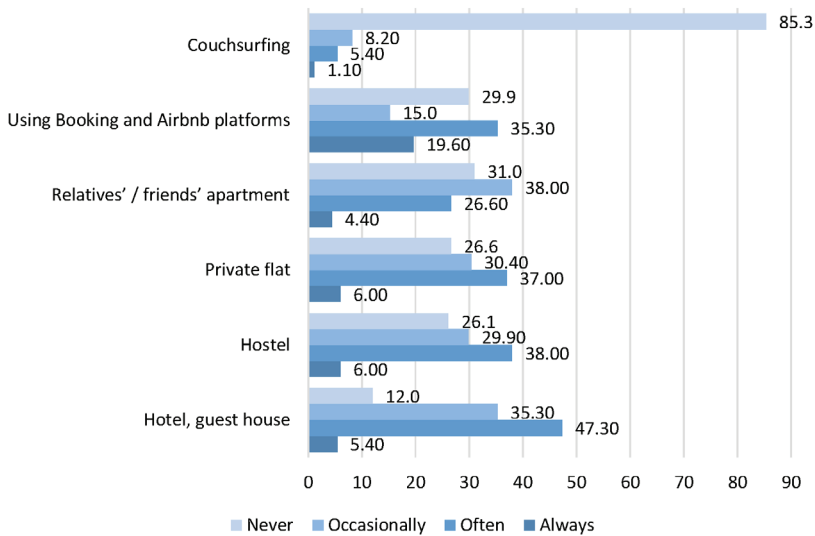


Figure 2. Types of accommodation used on city break trips (in %)

Source: Author's own elaboration based on the research.

The respondents most often used accommodation offered on Booking and Airbnb platforms. The least popular was the use of non-commercial accommodation, i.e. couchsurfing (Figure 2). Even though Poles in general are often hosted by relatives and friends when on holidays, this type of accommodation was rarely used by city break visitors.

The factors that determined the choice of accommodation were primarily the price (43.2%), followed by the distance from the centre (32.1%), which seems appropriate for this type of trips. Also convenience (27%) and distance from attractions (25%) were viewed important. The less important factors included: available equipment and opinions (17.9%), originality of the place (7.1%), recommendation by family and friends (5.8%) and promotional offer (5.8%).

The fact that respondents chose cities in Poland more often than abroad translates into their preferred means of transportation. Respondents most often chose the train (31.5%) and the car (29.9%) to travel. Air travel came third (27.7%), followed by the coach. The main factor determining the choice of transportation was the price (37.9%). Journey time was important for one in three respondents (29.4%), while convenience for one in four (25.0%).

3. Conclusions

City break is an attractive form of spending free time, enabling the implementation of two functions: relaxing and sightseeing. The situation on the market (before COVID-19 epidemic) had shown that tourism sector had been developing in dynamic pace. That was indicated by the scale of touristic demand, as well as the involvement of local entrepreneurs,

local governments and plenty of other organizations which aim was to promote cities as places for a short tourist stay.

The growing popularity of this type of tourist trips was influenced by the desire to rest combined with sightseeing and well developed transportation and accommodation infrastructure which enables quick access and effective use of free time. Hence, big cities which often are capital cities are so popular. This thesis was confirmed by the conducted survey. From the surveys the following conclusions were drawn:

1. The main factor deciding about tourist trips was recreation outside the everyday environment.
2. The respondents were slightly more likely to choose well-connected cities in Poland than the capitals of the European countries. The list of most preferred destinations also includes smaller towns which are extremely popular with tourists, i.e. Zakopane and Kazimierz Dolny. Interestingly, the reason for choosing a given city was not only the desire to see something new, as reported by one in three respondents, but also to return to already known and previously enjoyed places (a decisive motive for over one in four respondents). It shows that emotions play the key role when choosing the place for leisure. It is also a guide for touristic entrepreneurs, which proves that a satisfied customer is willing to come back to the same place again.
3. The most frequently chosen attractions in the visited cities included historical sites, off-the-beaten-track places rarely visited by tourists travelling in organized groups and cultural events.
4. The respondents were most likely to reserve accommodation posted on popular booking platforms and their choice was mainly determined by the price and distance from the centre. The weight of the latter factor also resulted from the fact that the most popular means of transportation was the train, followed by the car in second position.
5. The survey has also shown that the term *city break* is spreading more slowly than the idea of this type of trips. It is an important guide for touristic entrepreneurs and local governments. Extended attraction offer may expand the number of touristic trips.

The attractiveness of city break trips was influenced by many factors, either practical (quick commute, praise, popular monuments) or emotional (searching for the new, originality, return to previous places, the possibility of escaping everyday hustle). The presented survey has shown the complexity of city break trips as the area of the research. It has also proved that online surveys, although have many advantages, have also some limitations. The main thing is that young people using the Internet and social media participate in them. This age group is the most active and visible in tourism. However, it is difficult to maintain an equal number of women and men surveyed. While conducting next research it is crucial to lay an emphasis on respondents' participation from each demographic and social group. In period of research and editing of the obtained data the health situation worldwide has been rather stable. In the era of global COVID-19 pandemic, we can only predict in which direction the touristic market will develop after the end of the epidemic. In author's opinion, if the epidemic ends, city break trips to well communicated cities will be gaining in popularity among tourists worldwide. Promotions and discounted offers on accommodation and cultural events, which cannot take place today, though will be present in the future with high frequency, will be a favour to city

break trips. The obstacles with crossing state borders will cause probably local tourists rather than foreign tourists to be the first to take part in such a touristic activity.

Knowing the conditions for the development of this form of spending free time, one can put forward the thesis that we will observe intensive development in this area of tourism, which broadens the space for future scientific research.

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City break jako forma turystyki miejskiej

Abstrakt: Celem badań była ocena atrakcyjności „city break” jako formy turystyki miejskiej (poznawczej). W opracowaniu postawiono następujące pytania: Jakie czynniki wpływają na popularność wyjazdów typu „city break”? Które miasta są najczęściej wybierane jako miejsca krótkookresowego wypoczynku? Jakie czynniki decydują o wyborze tych miast? Jakie obiekty w miastach cieszą się największą popularnością wśród respondentów? W jaki sposób organizowane są wyjazdy „city break”? W pracy dokonano analizy literatury z zakresu atrakcyjności turystycznej miast oraz uwarunkowań rozwoju wyjazdów „city break”. W ra-

mach metody sondażu diagnostycznego zastosowano ankietę internetową. W badaniu wzięły udział 184 aktywne turystycznie osoby. Wyniki pokazały, że główne powody korzystania z „city break” to chęć oderwania się od codzienności, zwiedzanie i odpoczynek. Częściej niż zagraniczni respondenci wybierali miasta w Polsce, do których dojeżdżali pociągiem lub samochodem. Najczęściej zwiedzali zabytki oraz miejsca „nieodkryte” przez turystów zorganizowanych, a główny powód wyboru danego miasta to właśnie chęć zobaczenia czegoś nowego. Temat opracowania i poruszane problemy świadczą o oryginalności wybranego obszaru badań.

Słowa kluczowe: city break, turystyka, miasta, destynacja turystyczna, atrakcyjność turystyczna

Slums as a place of tourist reception

Krzysztof Sala

Pedagogical University
of Krakow, Poland

E-mail: krzysztof.sala@up.krakow.pl
ORCID: 0000-0002-7614-9309

Abstract: Contemporary tourism is a phenomenon on a global scale. The number of participants in global tourism is constantly increasing. Only in 2018, 1.4 billion trips were made. Like all phenomena in the world, tourism is also constantly changing. Variation may concern travel directions, but also the reasons for it. Visiting areas of social exclusion and poverty are among the most original motives for travelling. The purpose of the publication is to show that slums around the world can be an important place for tourist reception, while being places with a specific quality. Research methods used in the work are literary criticism and analysis of existing data. The publication was written using compact data, scientific articles and netographic data. The results of the scientific analysis clearly show that slums as tourist destinations bring with them a varied tourist valorization, including the opportunity to get to know local entrepreneurship, organization of everyday life, difficult life or survival in specific living conditions.

Keywords: poverty, entrepreneurship, development, ecological exclusion, social exclusion

1. Introduction

The motives of world tourist traffic are constantly changing. A contemporary tourist is a person who more and more often behaves differently from the twentieth-century tourist. He breaks with elegance and luxury, and directs his interests towards gloomy subjects. Dark tourism or slum tourism is becoming a phenomenon on the contemporary tourist market. This type of activity is associated with staying in specific places in search of sensations and adrenaline. In this case, tourists are interested in places that once discouraged from visiting and were widely advised against by tour operators.

The main purpose of the publication is to show that slums around the world can be an important tourist destination. The research issues of the publication concern specific areas,

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Correspondence to:
Krzysztof Sala
Uniwersytet Pedagogiczny im. Komisji
Edukacji Narodowej w Krakowie
Instytut Prawa, Administracji
i Ekonomii
ul. Podchorążych 2
30-084 Kraków, Poland
Tel.: +48 12 662 62 11

which certainly include areas of social exclusion. The specific objectives are to introduce the specific characteristics of slums.

Research methods used in the work are literary criticism and analysis of existing data. The publication was written using compact data, scientific articles and netographic data.

The results of the scientific analysis clearly show that the slums present diverse tourist valorization, including the one related to the possibility of getting to know local entrepreneurship, organization of everyday life, difficult life or survival in specific living conditions.

2. Slums as areas of poverty in the world

The term *slum* is very likely derived from the colloquial term *room*, transformed into *back slum* meaning “side alley, street of the poor” (Rana, 2017). The emergence of the first slums in the world in the nineteenth century was inextricably linked to the negative results of the industrial revolution and the development of capitalist economy from the turn of the eighteenth and nineteenth centuries (Chwalba, 2012, p. 68). Shortages in other parts of the city, colonialism and segregation, social exclusion, politics, social conflicts, and natural disasters were considered to be the most frequently cited causes of slum formation in the early twentieth century. M. Davis attaches a special role to the emergence of misery districts as the results of “shock in the global countryside”, i.e. the policy of economic liberalization and actions to deagrarianization of the village and depeasantizing its inhabitants, which forced the rural population to migrate to overcrowded urban areas (Davis, 2009).

The industrialized cities of Great Britain as well as the USA are considered to be places of appearance of the first slums in the world. Soon they began to appear in other countries (including France, Canada). Slum districts at that time consisted of tightly built houses, offering low-quality housing. Their tenants were usually low-paid workers (Eckstein, 1990). In many cases, they were adjacent to rich districts (e.g. in London, New York, Paris or Toronto).

Today, Europe has poverty districts or enclaves of poverty that are inhabited by poorer sections of the population and immigrants. European areas of poverty are often made up of old settlements made of large panels or neglected tenements which have not been renovated for years. Such districts can be found in many European cities (Borowik, 2003). This also applies to cities in Poland (Basista, 2001).

Currently, typical slum areas are mainly located in Third World countries. They occupy a large area of cities or suburban areas. Slums in Third World countries have a different pedigree compared to those in Europe. They most often arose as a result of colonial policy (e.g. India, Kenya, South Africa), the effects of abolishing slavery (e.g. Brazil), or the unproductive migration of people from villages to cities (e.g. Mexico, Venezuela). Sometimes they are also the result of too high living costs in the cities themselves (e.g. Egypt) (Gawlik, 2013).

Houses in poverty enclaves are created mainly from the most accessible and at the same time the cheapest materials such as cardboard, plywood, sheet metal and stones. Rarely, these are stone-built houses. The provisions of the construction law or building permits do not apply here. Houses and streets are without names or numbers. In addition to housing poverty, the characteristic features of slums are environmental problems related to the lack of plumbing or the accumulation of rubbish. Areas of poverty are often deprived of access to the media and digitally excluded (Dijk, 2010).

According to estimates, there are over 200,000 slums in the world. The number of inhabitants in a single slum ranges from several hundred to over a million people. It is estimated that currently the global slum community has about 900 million people. According to the UN, around a quarter of the world's urban population lives in slums, and the number is constantly growing. According to UN-Habitat data, the largest percentage of people lived in areas of poverty in geographical regions such as sub-Saharan Africa (62%), then southern Asia (35%), southeast Asia (31%), eastern Asia (28%), western Asia (25%) as well as Oceania (24%) and Latin American countries (24%). The shameful leaders in terms of slum population include countries such as the Central African Republic (95.9%), Chad (89.3%), Niger (81.7%) and Mozambique (80.5%) (UN-Habitat, 2012). Sometimes the term *slums* is extended. There is also the concept of “megaslums” in literature, when the districts of poverty and communities of wild tenants located on the outskirts of cities merge into the zones of poverty (Bogacz i nędzarsz, 2016). Table 1 presents the most important areas of modern poverty.

Table 1. Areas of poverty in Third World countries in 2019

Name	Location	Estimated number of inhabitants in millions
Maharashtra	India	19,0
Neza-Chalco-Itza	Mexico	4,0
Kibera	Nairobi, Kenya	2,5
Sadr City	Baghdad, Iraq	2,0
Orangi Town	Karachi, Pakistan	1,8
Manshiet	Cairo, Egypt	1,5
Dharavi, Mumbai	Mumbai, India	1,0
Petare	Caracas, Venezuela	1,0
Navas	Manila, Philippines	1,0
Cité Soleil	Port-au-Prince, Haiti	0,4
Khayelitsha	Cape Town, South Africa	0,4
Sultanbeyli	Istanbul, Turkey	0,2
Rocinha	Rio de Janeiro, Brasil	0,2
Kamagasaki	Osaka, Japan	0,03

S o u r c e: Author's own elaboration based on Rankingi24.pl, 2014.

The data in Table 1 indicate the spatial diversity of slum locations around the world. Accurate determination of the number of inhabitants of a poverty enclave is a difficult task due to the widespread lack of statistics in this area and the constant flow of people. Publicly available sources often do not agree on the size of a given slum.

3. Roots and the concept of slums as tourist reception areas

Interest in slums as areas of tourist reception is the effect and consequence of increasing social inequality in the world. Visiting places of social exclusion also results from the usual desire of travellers themselves to search for new impressions and experiences (Buczowska, 2014). It is also often the result of boredom with cities, schematic and standard travel programmes, as well as traditional forms of tourism that have been practiced for years. Interest in slums also comes from the feeling of being saturated with luxury and the usual desire to change. Some tourists want to feel the risk of adrenaline. Increasing demand on the tourist market affects the supply side. More and more travel agencies offer organized tours with slum guides, and hotel companies are building new facilities in the vicinity of poverty areas (Frenzel, Koens and Steinbrink, 2012).

Slum trips and stays are sometimes referred to as “slum tours”, “real world tours”, “adventure tourism”, “poverty tourism” or “tourism of social exclusion areas”. In some countries the names “slum tourism”, “favel tourism” are used (Hernández García, 2013). Some authors refer to it as “controversial tourism” (Sikora, 2015).

Visiting the slums, interestingly, has a rich history. The concept of “slumming” became the slogan in the Oxford English Dictionary in the 1860s. In free translation, it means “entering slums or frequent use of them for infamous purposes.” In September 1884, *The New York Times* published an article on the latest leisure trend: “Slumming will become a fashionable form of debauchery among our citizens, because our foreign cousins will always be ready to show us around” (Lee, 2009).

The first tourists visiting the slums were representatives of the British middle and upper class, visiting the poverty districts first in their country and then in the USA (Steinbrink and Pott, 2010).

The popularity of such trips disappeared after World War II due to the increase in prosperity and thanks to social housing programmes. However, this fashion came back in the 1980s and 1990s (Sadowski, 2019). Since the 1980s, slumming has become widespread by South African activists, who opposed the propaganda of the authorities and showed tourists and employees of international aid organizations less representative districts of South African cities. During the Earth Summit in Rio de Janeiro in 1992 local tourist offices included in their offer the opportunity to visit the poverty districts. The main recipients of this form of getting to know the city were primarily conference participants—representatives of governments and international organizations, as well as employees of non-governmental organizations (Gandecka, 2016).

The contribution to the promotion of slum issues was due to pop culture. It was in Brazilian slums that Michael Jackson made the music video for the song *They Don't Care About Us*. Film productions such as *Faithful Gardener* (Nairobi, Kenya), *Slumdog Millionaire* (Bombay, India), *City of God* (Rio de Janeiro, Brazil), *District 9* (Johannesburg, South Africa) were also devoted to the subject of slums. The subject of slums is also devoted to numerous publications and book publishers (including Charles Dickens and Émile Zola).

Currently, slum stays are considered by most authors as forms of cultural tourism and cover the whole world. However, it applies mainly to Third World countries, where the density

of poverty enclaves is highest, and the nature of their operation causes the greatest interest among visitors (Olczyk, 2013).

Areas of social exclusion in the world are not one. They have a diverse character of buildings, housing, ecological or sanitary situations. Their inhabitants represent a diverse approach to life, professional duties or strangers. The level of security in slums can also be heterogeneous. Considering the above conditions, poverty enclaves in the world represent a diverse level of tourist attractiveness.

The most visited areas of poverty in the world are the ones located near attractive cities or areas of interest to countries around the world. A tourist can, therefore, visit slums often while staying in some historic city or doing other types of tourism. Access to the professional offers of local tourist agents is also important. For security reasons, tourism in the slums is collective, organized and with the help of local guides.

Tourists, according to their own opinions, go to the slums for various reasons. Cognitive and cultural motifs prevail, which make it possible to get to know everyday living conditions and ways of solving current problems. This applies in particular to ways to earn money, support a family or spend free time. Such motifs have a strong educational element, most often associated with culture shock. Often tourists want to learn about local, often unusual architecture. Less common motifs are associated with the search for sensations, entertainment, fun or strong emotional experiences. The motives for visiting some of the slums are extreme tourism because of the high level of threat to the safety of visitors. For tourists from countries such as Poland it is also a peculiar trip back to the times of real socialism, where poverty was a common phenomenon.

4. Tourist attractions of slums in the world

Among the many existing slums in the world, the most attractive are certainly the favelas located in Brazil (including especially Rocinha in Rio de Janeiro). Rocinha represents a rather unusual and interesting example of the area of poverty. Its biggest assets include its location, near the city of Rio de Janeiro, which due to its numerous tourist attractions (Copacabana and Ipanema Beaches, Sugar Hill or Maracana Stadium) belongs to the most visited in all of Brazil. Only in 2017 it was 2.3 million tourists (Geerts et al., 2017).

Unlike many areas of poverty in the world, Rocinha has a fairly high level of internal organization. It has been an official city district since 1993. Its area is 143.72 ha and it consists of 14 administrative units. Its inhabitants constitute about 22% of the city's population (Caldado, 2016).

The favela in question consists of quite solid brick houses with facilities such as playgrounds, sports fields and even kindergartens. Rocinha has fairly comfortable roads (1/3 asphalted), its own cleaning service and a substitute for paid public transport. According to many experts, it is inhabited not only by extremely poor people, but also by representatives of the so-called lower middle class, which, however, cannot afford flats in the city itself or are not accepted there for various reasons. The inhabitants of the area in question make a living mainly from working in the city of Rio de Janeiro. Some people also start their own busi-

ness in the favela, running private dance schools (e.g. samba), restaurants, hostels and even small hotels.

Rocinha attracts tourists with its specific climate, cultural conditions, and because of its location with picturesque views of the Atlantic Ocean coast. Tourists are particularly interested in the local legendary samba schools, local cuisine, art (especially very original murals, bright colours of houses), as well as the housing conditions of the residents. However, for security reasons, individual tours are rare. The biggest threat to visitors is the constant struggle of drug gangs. For this reason, professionally organized, collective forms of sightseeing dominate. Tourists live in slums or directly in their surroundings (Hayes, 2016). The 2014 World Cup held in Rio de Janeiro caused an increase in interest in renting rooms and even entire houses in Rocinha, despite several times higher prices (WP Tourism, 2014a).

Increased interest in slums as areas of tourist reception influenced the development of local infrastructure. In the richer neighbourhoods of Rio de Janeiro, neighbouring Rocinha, many high-class hotels have been built. Independent facilities dominate, but you can also find global hotel companies (e.g. Marriott, Hilton). They build hotels near the slums, allowing their guests to observe them. They are particularly concentrated in the Vidgal district.

Kibera's slums located near Nairobi can also be included in the most tourist poor areas in the world. The neighbourhood of the capital of Kenya and its monuments undoubtedly positively influence the local tourist traffic. Unlike Rocinha, Kibera is an example of a typical primitive slum, consisting of numerous simple apartments built of the simplest materials. Despite this, its tourist attractiveness is ranked according to specialists just behind the African safari, and right next to the Karen Blixen Museum or Mombasa beaches (Perry, 2010).

Kibera tourist escapades are organized by guides employed by tour operators. Tourists are interested in everyday aspects of life and possibilities of functioning in a place where there is less than 2 m² of living space per 1 inhabitant, and the lack of access to running water and electricity is commonplace. Curiosity is also caused by ways to survive in a drainless area, where half of the population are children and 1/5 of the population is infected with HIV. The tour takes place on foot and involves visiting the most important attractions. Tourists visit a typical local house, primary school, orphanage, Catholic church, as well as a train station on the international Kenya–Uganda route. An important educational value for tourists in Kibera is also the opportunity to evaluate the results of implementing the government's programme to build new, cheap apartments with more solid and aesthetic housing. The programme implemented since 2009 is unique on an African scale and it is intended to improve the current situation of residents. The benefits of tourism are also shared by the inhabitants of the slums in question. They have the opportunity to earn on tourists by selling tourist souvenirs or other goods at the local market. Tourists are usually also interested in the possibility of sharing a meal with the local population (WP Tourism, 2014b).

In terms of architecture, sanitation or access to utilities, the Dharavi slums in India represent a similar valorization as Kibera. However, visiting them gives you not only the opportunity to learn about the living conditions of the inhabitants, but also to take part in a specific slum entrepreneurship lesson. In this respect, Dharavi are a real phenomenon. Per 1 million inhabitants here, 250,000 shows professional activity while working on recycling. In addition, there are also about 5,000 companies and 15,000 one-man factories. In addition to recy-

cling, the most common activities include pottery, soap and leather products. There are also over 100 restaurants, bakeries and several thousand shops. Residents also earn by offering accommodation in their homes. For the equivalent of 31 USD per night, visitors have the chance to rent a room and learn about the typical living conditions in poverty, where 1 toilet is for 1,300 people (TTG Polska, 2018). It is estimated that the annual income of the Dharavi community is about 1 billion USD. However, the majority of inhabitants are low paid and exploited, and cases of child labour are also frequent (Edmonds and Pavcnik, 2005).

The slums frequently visited by tourists include Khayelitsha in South Africa. Like Kibera, it is located near a large tourist town Cape Town. The interest of tourists is caused by the local, specific community. Unlike many other slums, these are mainly young people (up to 24 years old), of which almost half have secondary education and more than half are professionally active. The popularity of Khayelitsha among tourists, however, is primarily due to the hospitality and friendly attitude of its inhabitants, which is not typical of the global enclaves of poverty. Residents make contact with guests and allow themselves to be photographed. The area in question is a cognitive and educational attraction because of the large community of artists, craftsmen, actors and musicians. Tourists have the opportunity to buy numerous tourist souvenirs, which also benefits the hosts. In Khayelitsha, a tourist can feel and learn the benefits of local spirit and being a member of the local family community. Despite this, the majority of residents are struggling with food and running water problems typical of the areas of poverty (Totaro, 2016).

In addition to the poverty enclaves discussed above, interest in slums as places to stay is noticeable in many other parts of the world. Slums in the Philippines have been popularized by a book by Wojciech Tochman. However, the tourism here has a specific character. Trips are composed mainly of white tourists who treat slum visits as an opportunity to support or even feed its inhabitants. Kamagasaki slums in Osaka can arouse curiosity due to the close proximity to the rich Osaka agglomeration in Japan. High-rise residents are looking down on the poor Kamagasaki community. Despite the terrible poverty and resignation on the faces of the inhabitants, Kamagasaki is characterized by a specific sense of community and openness, which is difficult to meet in Japanese cities (Ostaszewski, 2014).

It is also worth mentioning here the Petare slums in Venezuela, which, despite the great tourist potential, are rarely visited by tourists. The tourist rating of Petare is similar to Brazilian favelas. The local architecture is characterized by varied colours of house facades and strong presence of unique murals. The climate of this area is also created by characteristic narrow streets and majestic views of the centre of Caracas. However, high crime and a sense of threat to life are the causes of low tourist traffic (WP Tourism, 2012).

In addition to the poverty enclaves enjoying high interest from tourists, there are also those whose visiting is an example of extreme tourism. Cité Soleil in Haiti is one of the least touristic slums in the world. The country itself is rarely chosen as a tourist destination in itself and visiting local slums is in the form of trips from neighbouring Dominican Republic. Cité Soleil has a very poor infrastructure, compounded by a strong earthquake in 2010. To this must be added the natural environment degraded as a result of looting. The accommodation, nutrition and transport services here, taking into account the income of the inhabitants, are extremely high. Tourists taking trips around Cité Soleil must take into account very high expenses (Krzyk, 2013).

5. Conclusion

Visiting slums is undoubtedly one of the most original tourist travel motifs. Certainly this type of tourism is the domain of people who strive to fully know the places visited, not just superficial sensations. However, it is worth considering the specific qualities that this type of activity presents. Educational elements are particularly noteworthy, thanks to which one can get to know and understand the specificity of these areas and their inhabitants better. An example is the Brazilian samba or Cuban rumba, dances popular today around the world, which arose as a form of entertainment for the poor slum dwellers. In many cases, you can also learn a lot in such areas as dealing with difficult situations, earning a living or spending free time.

The development of this form of tourism will depend on many factors. These include: promoting slum issues in the media and effectively reaching public opinion, developing professional organization of trips to slums, and finally raising awareness of valorization by visiting poverty areas and contacts with their residents. One should also bet on more effective marketing of this type of tourism, especially among tourists from wealthy countries.

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Slumsy jako miejsce recepcji turystycznej

Abstrakt: Współczesna turystyka stanowi zjawisko i fenomen na skalę globalną. Liczba uczestników światowego ruchu turystycznego nieustannie wzrasta. Tylko w 2018 roku odbyto 1,4 miliarda podróży. Tak jak wszystkie zjawiska na świecie, tak również i turystykę cechuje nieustanna zmienność. Zmienność może dotyczyć kierunków odbywania podróży, ale także przyczyn jej uprawiania. Do najbardziej oryginalnych motywów odbywania wyjazdów turystycznych zaliczyć można odwiedzanie obszarów wykluczenia społecznego i biedy. Celem publikacji jest wykazanie, że slumsy na obszarze całego świata mogą stanowić

istotne miejsce recepcji turystycznej, będąc jednocześnie miejscami o wyraźnej specyfice. Metody badawcze zastosowane w pracy to krytyka piśmiennicza oraz analiza danych zastanych. Publikacja została napisana przy wykorzystaniu danych zwartych, artykułów naukowych oraz danych netograficznych. Wyniki analizy naukowej wskazują wyraźnie, że slumsy jako cele wyjazdów turystycznych niosą ze sobą zróżnicowaną waloryzację turystyczną, w tym możliwość poznania miejscowej przedsiębiorczości, organizacji codziennego, niełatwego życia czy też przetrwania w specyficznych warunkach bytowych.

Słowa kluczowe: bieda, przedsiębiorczość, rozwój, wykluczenie ekologiczne, wykluczenie społeczne

Tourism activity of Polish seniors

Agata Balińska

Warsaw University
of Life Sciences – SGGW, Poland
E-mail: agata_balinska@sggw.edu.pl
ORCID: 0000-0002-8777-9955

Monika Wojcieszak-Zbierska

Poznań University
of Life Sciences, Poland
E-mail:
monika.wojcieszak@up.poznan.pl
ORCID: 0000-0002-9962-2648

Abstract: Research into tourism activity of seniors is a response to social changes taking place in European countries, including Poland. Because of ageing societies, senior tourism becomes an important and developing sector of the tourism market. The purpose of this study was to explore the travelling patterns of elderly people who are socially active in their day-to-day environment. Also, this study addressed some research problems which boil down to determining: how often do Polish seniors travel; what are the main reasons behind senior tourism; and how are their trips organized. This paper includes a literature review and presents findings from an empirical study based on a survey questionnaire administered to learners at the University of the Third Age of the Warsaw University of Life Sciences. Based on their research, the authors identified the need for stimulating social activity, including tourism activity of seniors. The respondents enjoyed taking part in organized domestic and international trips. Research also suggests that seniors had a preference for long (at least 5-day) trips, willingly used travel agency services, and enjoyed travelling by plane and staying in hotels.

Keywords: tourism, tourism activity, seniors, research

1. Introduction

In Poland, the issue of seniors becoming engaged in tourism activities has been addressed in a number of scientific papers over the last years (including: Nimrod and Rotem, 2010; Kowalczyk-Anioł, 2011; Hołowiecka and Grzelak-Kostulska, 2013; Reece, 2014; Śniadek, 2014; Oleśniewicz and Widawski, 2015; Szpara, 2015; Kociszewski, 2016; Ociepka and Pytel, 2016; Parzych and Gotowski, 2016; Zawadka, 2016; Januszewska, 2017; Markiewicz-Patkowska et al., 2018). According to Eurostat data, the elderly population grows around the world, with the largest share of seniors being recorded in Europe. According to EU data, ca. 19% of the Union population were aged 65 or more in 2018. Currently, the European Union's population is over 446 million

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Correspondence to:
Agata Balińska
Szkoła Główna Gospodarstwa
Wiejskiego w Warszawie
Wydział Ekonomiczny
ul. Nowoursynowska 166
02-787 Warszawa, Poland
Tel.: +48 22 593 41 54

(this excludes the UK which exited the EU) (Eurostat, 2018). In turn, according to Eurostat's forecasts, the European Union's population will reach 522.2 million by 2065 (Eurostat, 2018). The analysis of the age structure suggests that young people (aged 0–24) account for 25.8% of the total population whereas the working-age population (aged 25–49) have a share of one-third. Over 20% are people aged 50–64; persons aged over 65 represent 14% of the EU's population (Eurostat, 2018). As Parzych and Gotowski (2016) emphasize, the ageing of European societies is unequivocally linked with the increased life expectancy in Europe. This is due to improvements in economic standards of living and to considerable progress in healthcare services. Although Poland has for years been among the youngest societies, it now approaches the Western European social structure. Meanwhile, leisure and tourism are believed to be important aspects of lifestyle in developed countries. Seniors are often viewed as the least active segment of the tourism market due to body ageing and low levels of average incomes. The ongoing socio-demographic changes and progress in medical development are the reasons why seniors see their purchasing power grow and become an increasingly important consumer group, including in the tourism market.

2. Seniors as buyers of tourism services

Ageing is a complex and prolonged process which can vary in pace depending on the interaction between multiple factors, including social, genetic, environmental, physical and lifestyle aspects (Abramowska-Kmon, 2011). Irrespective of how fast they occur in individuals, changes that affect human bodies result in declining physical fitness, sensory disorders and numerous chronic diseases. Hence, as a consequence of biological ageing, human bodies gradually lose their physical reliance which affects individuals' general activity, including tourism. Ageing is both the consequence and the cause of many major changes in life and of transformations driven by psychological, biological, social and economic aspects. These changes determine the needs and motivations of elderly consumers (seniors) related to tourism consumption or tourism activity (Śniadek, 2014).

As emphasized in numerous scientific papers, it is difficult to define a "senior". It is a word of Latin origin (*senex*, old), means "older", and refers to the oldest member of a family or group (Szymczak [ed.], 1989, p. 196). Górna (2015) indicated that several aspects may be considered when defining the border between a mature and an elderly person. The first one is the social aspect, i.e. becoming a grandmother or a grandfather. The second one is the cultural aspect related to the customs and traditions of a society. Next goes the health aspect, i.e. a deterioration in the physical condition and fitness. According to Górna, the economic aspect results from ending one's professional life, and retirement is a major factor in defining an elderly person. Another approach to defining a senior was proposed by Walker (2002) and Lisowska (2006). Walker identified four categories of old age: the pre-retirement and early retirement group (55–64 years old), retirees (65–74 years old), older retirees (75–84 years old) and people aged 85 or more. In turn, Lisowska (2006) divided the seniors into three groups, i.e. old-age people (60–75 years old), senile people (76–90 years old) and long-lived people (over 90 years old). The World Health Organization indicates that 65+ years may be usually denoted as old age (Kowalik [ed.], 2009). Having the above old-age classifications in mind, it can be concluded that the literature uses the word "seniors" when referring to people aged 60 or more. Research demonstrates that

the senior tourism offering requires the target group to be addressed in a different way as they have specific needs and expectations (Hołowiecka and Grzelak-Kostulska, 2013; Łaciak, 2013; Oleśniewicz and Widawski, 2015; Januszewska, 2017; Markiewicz-Patkowska et al., 2018). Importantly, seniors are viewed as a heterogeneous group because it includes people guided by different motives. The senior-oriented segment of the tourism market requires a specific approach to be adopted due to a number of characteristics, including age, education, marital status, income, health, family and financial status, and previous lifestyle (Grzelak-Kostulska, Hołowiecka and Kwiatkowski, 2011). In this context, note that some of these characteristics can have a much greater impact on the tourism activity of seniors. For instance, learners at universities of the third age form a very special group of elderly people.

3. Seniors as a segment of the Polish tourism market

According to the Central Statistical Office, Poland had a population of 38.413 million in 2018, of which 19.2% were people aged over 65 (GUS, 2019b). In 2020 and 2035, the Polish population is forecasted by the Central Statistical Office to be only 37.8 million and 36 million, respectively (GUS, 2019b). Papers on the demographic condition of Poland suggest that in addition to consistent depopulation, the country is also affected by the ageing of its society (Table 1).

Table 1. Demographic structure of the Polish population aged 60 or more

Specification	2014	2015	31.12.2018
Population aged 60–64	2,673,734	2,726,536	2,776,033
Women	1,431,397	1,456,858	1,473,540
Men	1,242,337	1,269,678	1,302,493
Population aged 65–69	1,969,087	2,161,758	2,412,936
Women	1,094,991	1,200,267	1,334,960
Men	874,096	961,491	1,077,976
Population aged 70–74	1,228,749	1,208,233	1,595,967
Women	724,114	709,220	923,844
Men	504,635	499,013	672,123
Population aged 75–79	1,147,215	1,139,332	1,057,712
Women	719,682	713,305	655,388
Men	427,533	426,027	402,324
Population aged 80–84	864,182	862,711	876,469
Women	575,848	573,722	580,478
Men	288,334	288,989	295,991
Population aged 85 or more	664,814	704,384	789,276

	Women	485,991	512,465	568,606
	Men	178,823	191,919	220,670
Polish population [total]		38,478,602	38,437,239	38,411,148

Source: Authors' own elaboration based on Central Statistical Office data, GUS, 2019b.

Data from the Central Statistical Office shows that the post-working-age population will grow at an average annual rate of 100,000; and that in 2010–2018, the population aged 60 or more grew at an average annual rate of 200,000. When analyzing the Polish population structured by age and gender, it can be concluded that there are 2.7 million men aged 65 or more and 5.5 million women aged 60 or more (GUS, 2019a).

An active recreation has a beneficial effect on human health, mood and quality of living at all ages. Highlighting that aspect and recognizing its importance not only in a social but also in an economic context contributed to the introduction of legal regulations for the way people spend their free time. Gołembski (2002) emphasized that the evolution of “free time” started together with the reduction in the number of working hours per day and of working days per week. This was followed by the introduction of paid holidays and of legislation regarding old-age and disability pensions, all of which promote activity, including tourism. From the perspective of their tourism activity, seniors are a highly specific group. Restrictions resulting from their age and physical condition, together with economic barriers, often play an important role in whether or not they participate in tourism (Figure 1).

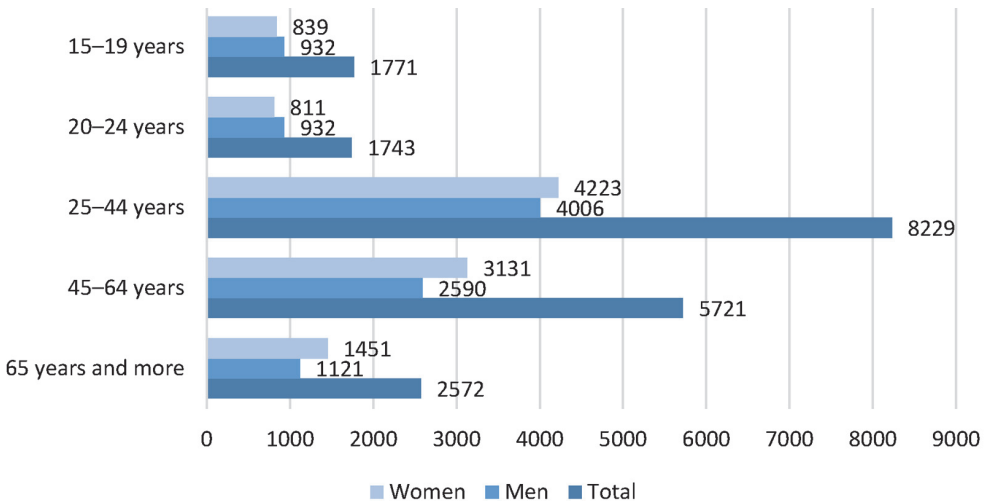


Figure 1. Levels of seniors' participation in tourism compared to other age groups in 2018 [thousand people]

Source: Authors' own elaboration based on Central Statistical Office data, GUS, 2019c.

Compared to other European societies, the participation in tourism of Poles aged over 65 (Respondek [ed.], 2009) suggests that the Polish elderly population are much less frequently involved in tourism activities than their Western European peers. According to *Sytuacja osób starszych w Polsce w 2018 r.* (Situation of the Polish elderly in 2018), a publication by the Central Statistical Office (GUS, 2020), seniors are highly willing to go on tourist trips, whether with a religious, health-promoting or explorative context. In 2018, nearly 4.1 million people aged 60 or more made at least one private tourist trip. A key aspect of the activity of Polish seniors is that they prefer spending their free time in a passive way. Secondly, they only rarely participate in tourism (with respect to both domestic and international tourism), which is often due to financial restrictions.

4. How do seniors behave in the tourism market: Findings from the authors' own research

4.1. Purpose, scope and organization of research

The purpose of research presented in this paper was to explore the particularities of how do socially active elderly people (learners at universities of the third age) travel. The following research problems are addressed in this paper:

1. What are the key reasons why seniors go on tourist trips?
2. What organizational form of tourist trips was the most frequently chosen by the respondents?

This study assumed that leisure is the main reason why the respondents go on tourist trips, and that in order to address that need, they go on self-organized domestic trips.

In order to meet that objective and answer the research questions, a survey was administered in 2017 to a sample of 173 elderly people who live in the Warsaw agglomeration and attend lectures at the University of the Third Age of the Warsaw University of Life Sciences. The empirical study relied on the diagnostic survey method, including the administration of paper questionnaires. The questionnaire contained 12 questions and a personal data section. The survey was carried out with all attendees of courses held at the University of the Third Age of the Warsaw University of Life Sciences in June 2017. Input materials were analyzed in quantitative and qualitative terms. The Spearman rank correlation coefficient was used in order to verify the dependencies between the share of income allocated to tourism and: professional situation; family size; and tourism destinations. This group of respondents was chosen mostly because such university meetings are attended by active people looking for new experiences. Previous research on tourism activity of seniors has taken little account of their social activity in the place where they live and of the relationship between that activity (on the one side) and the intensity of tourism activities and tourism destinations (on the other). Due to the sampling procedure, these findings do not provide grounds for any generalizations. However, they do reveal a certain trend.

4.2. Results of empirical studies

The study covered a total of 173 people, of which 69.4% were women. People aged 55–65 had a slightly dominant share of 52.6%. Most respondents (57.8%) had a tertiary education; every third respondent (33.5%) had a secondary or vocational education; only 8.7% had a primary education. A vast majority of respondents (61.8%) were retirees. Every third respondent was economically active and worked on a full-time (33.5%) or part-time (1.2%) basis. Only 5% of respondents were disability pensioners. Their tourism activity was strongly impacted by where they live. The largest part of respondents (56.1%) were residents of a city with a population over 500,000 (in this case, Warsaw), followed by people living in: rural areas (20.2%); cities with a population of 10,000–100,000 (15%); cities with a population of 100,000–500,000 (6.4%); and cities with a population of up to 10,000 (2.3%). The relatively large share of rural dwellers was due to rural areas becoming increasingly popular as a place to live in. Usually, these are rural areas adjacent to cities.

The vast majority (64.2%) were married. Other people were single, usually because their spouse died (23.7% of all respondents) or because they never started a family. Divorce was a rare reason (4.6%). Hence, the respondents differed in household size. Households of two had the largest share (37%), followed by single households (28.3%), households of three (14.4%), households of four (11.6%), and households of five or more (8.7%). All respondents declared to have a tourist activity, though to a different extent, as shown in Figure 2.

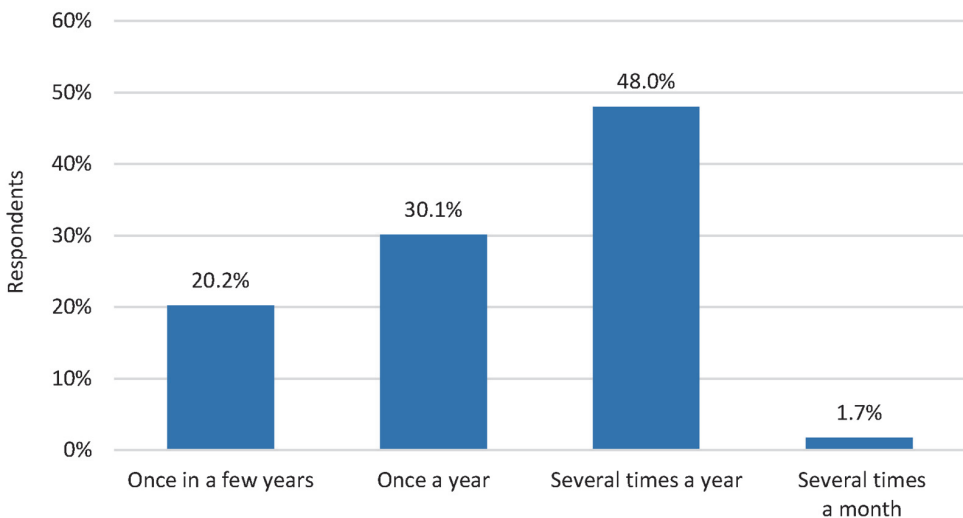


Figure 2. Frequency of the respondents' tourist trips

Source: Authors' own elaboration based on research results.

Nearly half of respondents made several trips a year; only every fifth respondent made a trip once every few years. Most respondents (34.1%) indicated international destinations, primarily including Spain, Slovakia and Germany. Every fourth respondent (25.4%) travelled to Polish cities while

nearly every fifth (19%) picked a rural destination. An own allotment garden was a relatively rare option (20.2%) indicated by every fifth respondent. These replies somehow deviate from the stereotype of elderly gardeners who spend their whole free time cultivating vegetables and flowers. Only 8.7% chose a vacation in the mountains whereas slightly more (12.1%) opted for a seaside destination. Interestingly, the frequency of travelling did not depend on the destination.

Obviously, summer was the most preferred season for tourist trips, chosen by more than half (59.6%) of respondents. Only 3.5% declared to be winter travellers. Every fifth respondent went on tourism trips during fall and spring. Although most respondents are free to do whatever they want with their time, weekend trips are the most popular option (45.0%), followed by business day trips (37.6%) and holiday trips (17.5%). The respondents preferred long (at least 5-day) trips; this was the option indicated by as many as 66.5% of them (including 83.5% who opted for a duration of up to 14 days).

The level of incomes is an important determinant of tourism demand; most importantly, this means the availability of funds that can be freely used. The respondents were asked about the proportion of incomes they allocate to tourism trips (Figure 3).

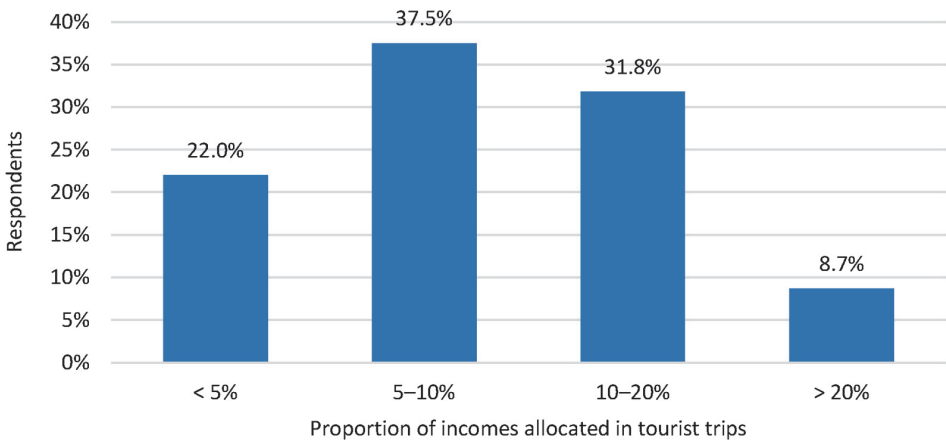
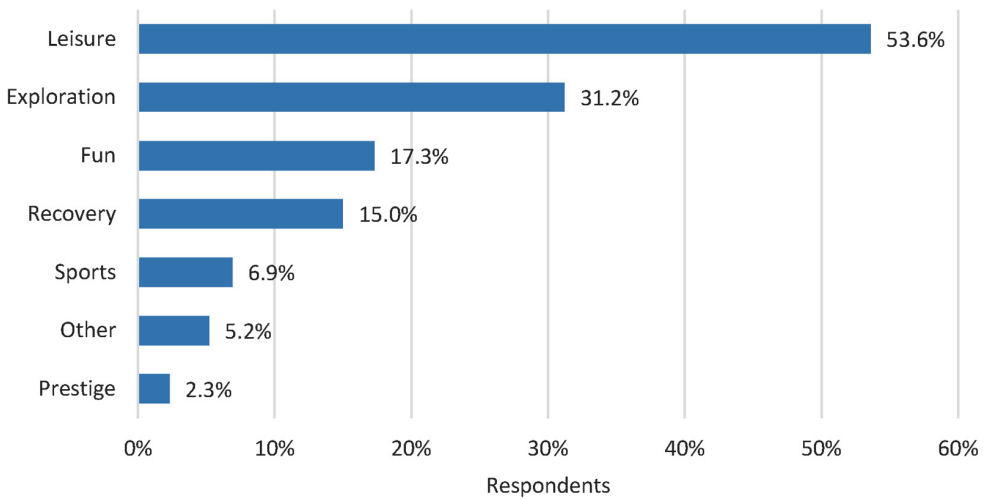


Figure 3. Proportion of incomes the respondents allocate to tourism trips

Source: Authors' own elaboration based on research results.

The largest group of interviewees allocate 5–10% of their incomes to tourism purposes. The level of real expenditure differed between them, which was probably due to: the size of their families and the related costs of living; their professional situation (some of them being economically active); and old-age pension disparities between occupational groups. However, no statistically significant relationship was discovered between the share of income allocated to tourism and professional situation, family size or tourism destination (the Spearman's rho was 0.11641, 0.09745, and -0.10560 , respectively). The main purposes of tourist trips are leisure and exploration of new places (Figure 4).



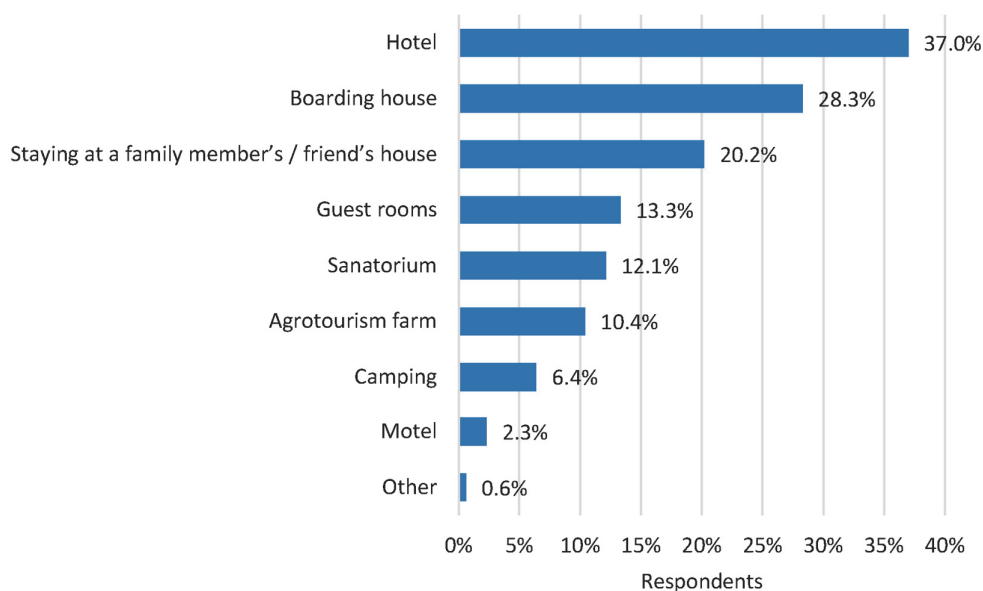
Note: The respondents could check more than one answer.

Figure 4. Declared reasons for going on tourist trips

Source: Authors' own elaboration based on research results.

The aspects indicated as the key reasons for going on tourist trips are also reflected in studies by other authors, although in a different order. According to research by Głabiński (2018) and by the Ministry of Sport and Tourism (2019, *Aktywność turystyczna osób starszych* [Tourism activity of the elderly]), intellectual curiosity and the willingness to explore are the key reasons why seniors travel. In turn, studies by Zawadka (2016) and Estrada-González (2017) suggest that the main reason is that they want to get some rest.

The respondents covered by this study also cited some other reasons (Figure 4), i.e. the intent to visit their family, contacts with grandchildren or religious motives. The study also took account of the respondents' preferences for accommodation options (Figure 5). Hotels were ranked high among the most frequently chosen accommodation options. This is because the respondents use packages offered by travel agencies (30.6% of them admitted they willingly do so). Research carried out by the Ministry of Sport and Tourism (2019) also confirms that when it comes to international trips, seniors usually stayed in a hotel. Only every tenth respondent used the services offered by agritourism farms. Conversely, a study by Zawadka (2016) suggests that private accommodation and boarding houses were the preferred option.



Note: The respondents could check more than one answer.

Figure 5. Accommodation options preferred by the respondents

Source: Authors' own elaboration based on research results.

Irrespective of the accommodation option, price was the main selection criterion, indicated by as many as 63.6% of respondents. Nearly every third respondent (28.3%) attached great importance to accommodation standards, nearly every fifth (22.5%) was guided by health concerns whereas only 10.4% relied on feedback from friends and family. Some respondents (6.4%) trusted the recommendations from travel agents.

Car (37.6%) and airplane (30.6%) were the main transport options used by the respondents. This is due to their preference for international destinations and services offered by travel agencies. Public transport, i.e. bus (27.2%) or train (7.5%), was relatively frequently selected by the respondents. This was especially so when they travelled to visit their family, their own allotments or sanatoriums.

5. Conclusion

The seniors' tourist activity is beneficial not only to themselves (e.g. by promoting recovery and preventing social exclusion) but also to the tourism economy. That segment will play an increasingly important role due to demographic change. Note that seniors are not a homogeneous group because not all people want to be looked at from the perspective of how old they are. Also, elderly people find it highly important to learn by developing their interests

and skills, and to gain new experience which contributes to their being more self-assured and improves their self-esteem.

This paper presents research carried out with seniors who learn at the university of the third age. This allowed to answer the research questions as follows:

1. Leisure was the main reason for going on tourist trips.
2. The respondents usually went on 5-day or longer trips. They did so on weekends and during summer which comes as a surprise because they usually were non-active persons who had free time on weekdays.
3. Although the trips were mostly domestic, every third respondent picked international destinations.
4. They used cars to travel and mostly stayed in hotels.
5. Note however that as many as one third of respondents used the services of travel agencies and travelled by car.

The authors realize that the sample used in this study is not representative and does not allow for generalization. Learners of courses offered at the universities of the third age are more open-minded and willingly engage in different activities, including tourism. However, this study shows that there is quite high interest in tourism travels, including commercial and international trips. Another aspect revealed by this study is the strong difficulty in accessing seniors, especially retirees. Finally, the study identified the need for activating the seniors and for checking whether and, if so, to what extent does their engagement in cultural, sport and educational activities (as available where they live) translate into different forms of tourism activity.

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Aktywność turystyczna seniorów w Polsce

Abstrakt: Badania nad aktywnością turystyczną seniorów stanowią odpowiedź na zmiany społeczne, jakie zachodzą w krajach europejskich, w tym w Polsce. Starzenie się społeczeństwa sprawia, że turystyka seniorów to ważny i rozwijający się sektor rynku turystycznego. Celem badań było rozpoznanie specyfiki wyjazdów osób starszych przejawiających w codziennym środowisku aktywność społeczną. Przyjęto również problemy badawcze, które sprowadzały się do określenia: częstotliwości wyjazdów seniorów w Polsce, głównych powodów wyjazdów turystycznych seniorów oraz sposobów organizacji tych wyjazdów. Dokonano ana-

lizy literatury oraz zaprezentowano wyniki badań empirycznych przeprowadzonych z wykorzystaniem ankiety wśród słuchaczy Uniwersytetu Trzeciego Wieku SGGW w Warszawie. Autorki wskazały potrzebę stymulowania aktywności społecznych, w tym aktywności turystycznej seniorów. Respondenci chętnie uczestniczyli w zorganizowanych wyjazdach krajowych i zagranicznych. Ponadto badania wskazują, iż seniorzy preferowali wyjazdy długookresowe, tj. minimum pięciodniowe, chętnie korzystali z usług biur podróży, transportu samolotowego oraz noclegów w hotelach.

Słowa kluczowe: turystyka, aktywność turystyczna, seniorzy, badania

MANAGEMENT AND QUALITY

Affective conflicts as determinants of supervisory boards effectiveness

**Małgorzata
Marchewka**

Cracow University
of Economics, Poland

E-mail: marchewm@uek.krakow.pl
ORCID: 0000-0002-7633-001X

Abstract: The introduction of the *upper echelons theory* by Hambrick and Mason in 1984 raised the interest in Top Management Teams (TMT) as key decision makers and in their impact on organizations' performance. As initial search for the relation between TMT structure and company effectiveness did not bring conclusive results, recently the emphasis has been put on TMT functioning and group processes. Affective conflicts defined as a disagreement between team members caused by personal dislikes are one of them. The main objective of this article is to enrich theoretical considerations with the empirical identification of the relationship between affective conflicts in supervisory boards and their effectiveness. Moreover, various determinants of affective conflicts were examined. Apart from theoretical analysis of the problem, the value of this article is the presentation of the results of own empirical study conducted among members of supervisory boards representing 46 public companies operating in Poland. The results showed that affective conflicts decrease board performance, but the relation is not statistically significant. It was also observed that the strongest determinants of affective conflicts are work organization, education level of board members, and team cohesiveness. Conclusions are useful for the organization and moderation of board meetings and the selection of candidates.

Keywords: Top Management Team, supervisory board, affective conflict, TMT effectiveness

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Correspondence to:
Małgorzata Marchewka
Uniwersytet Ekonomiczny w Krakowie
Kolegium Nauk o Zarządzaniu i Jakości
Katedra Procesu Zarządzania
ul. Rakowicka 27
31-510 Kraków, Poland
Tel.: +48 12 293 74 74

1. Introduction

The introduction of the *upper echelons theory* by Hambrick and Mason in 1980s (1984), emphasizing the relation between Top Management Teams (TMT) characteristics and companies performance, resulted in thorough research on these teams as key decision makers in organizations. Initially the focus was on structural characteristics of TMT, but the results of empirical studies were inconclusive (ex. Wiersema and Bantel, 1992; Peszko,

2006; Castro et al., 2009; Hsu, 2010; Bohdanowicz, 2010; Bermig and Frick, 2010; Bohdanowicz, 2011; Koładkiewicz, 2013; Bohdanowicz, 2017) and the relation between TMT and companies performance appeared to be more complex and indirect. The lack of coherent results initiated the search for other determinants of companies performance related to the functioning of TMT.

The revised model of the *upper echelons theory* presented by Carpenter, Geletkanycz and Sanders (2004) brought a breakthrough to the approach to TMT. The authors assumed that only structural factors impact TMT effectiveness, but also psychological aspects of TMT functioning. The original model was enriched with moderating factors such as group processes.

Growing popularity of the concept of group dynamics (Cartwright and Zandler, 1968; Forsyth, 1990; Levi, 2001) resulted in further studies on group processes at TMT, such as group cohesiveness, leadership, and intragroup conflicts (ex. Amason, 1996; Amason and Mooney, 1999; Forbes and Milliken, 1999; Van der Walt and Ingley, 2001; Atkinson and Atkinson, 2006; Carmeli and Schaubroeck, 2006; Murphy and McIntyre, 2007; Amason, Liu and Fu, 2010; Smith et al., 1994; Ensley and Pearce, 2001).

A group process that appeared to have great significance for TMT effectiveness and further for the company performance is an intragroup conflict, with an affective conflict as an example. The identification of its determinants, its mechanisms and its consequences requires including both corporate perspective and psychological approach to the functioning of a small group.

The main objective of this article is to identify the relation between affective conflicts in supervisory boards, as TMT in two-tier Corporate Governance system, and the effectiveness of these teams. Moreover, the goal was to identify the importance of structural and dynamic characteristics of supervisory boards to affective conflicts.

2. Group dynamics approach to supervisory boards

In two-tier system a supervisory board is the main responsible for Corporate Governance, not involved in operational management (Lis and Sterniczuk, 2005, p. 77). Given behavioral approach to Corporate Governance it is important to emphasize the specifics of supervisory boards as teams. Although the participation in supervisory boards does not require daily involvement in current operations (Pugliese, Nicholson, and Bezemer, 2015, p. 3), board members perceive themselves and they are perceived by the others as parts of a particular team (Cohen and Bailey, 1997, pp. 239 and 241), operating in a certain corporate context (Vandewaerde et al., 2010, p. 366). Moreover, board members are mutually interdependent because of common goals, tasks, responsibilities, and benefits (Marschak and Radner, 1958, p. 1).

Similarly to other teams, supervisory boards can be characterized with their static, structural features (ex. the number of board members, demography, group structure) and dynamics of their functioning. One of the most popular models of TMT group processes was presented by Forbes and Milliken (1999) and it relates TMT performance with board members' knowledge and skills through group processes, such as TMT cohesiveness, effort norms, and cognitive conflicts.

A great advantage of the concept of group dynamics is the focus on the relation between team structure and functioning and its effectiveness. On this basis team effectiveness can be improved, what makes the concept especially valuable for management. That is why diagnosing TMT performance is such a challenge.

In modern approach to the assessment of effectiveness various perspectives are integrated (Ziębicki, 2014, pp. 51–53): the orientation on achieving goals, system orientation, and focus on the value for stakeholders (Bielski, 2002). Multidimensional effectiveness of supervisory boards should include at least three different levels: psychological, of Corporate Governance, and organizational.

In psychological concept of group dynamics TMT effectiveness depends on task performance. The main tasks of TMT are controlling and advising (Forbes and Milliken, 1999; Levrau and Van den Bergh, 2007). According to Polish Commercial Companies Code¹, the most important task in case of a supervisory board is control (KSH, Art. 382 § 3), but its role is far more complex. Kołodkiewicz (2014, p. 70) distinguishes three basic spheres of supervisory board activity: control of a management board, cooperation with a management board, and cooperation with external environment.

The effectiveness of supervisory boards as elements of Corporate Governance system traditionally refers to companies' financial outcomes. However, nowadays financial performance is less informative than the ability to meet stakeholders expectations (Barwacz, 2011).

Especially in case of supervisory boards such an approach to TMT effectiveness may raise some concerns, because of the focus on its tasks defined by the Code. In fact, supervisory board performance is only one of various factors determining companies outcomes. Still its role becomes more significant in terms of strategic management (Peszko, 2006, p. 159).

3. Affective conflicts in supervisory boards

There are two main types of intragroup conflicts in TMT: cognitive and affective conflicts (Amason, 1996; Simons, Pelled and Smith, 1999; Ensley and Pearce, 2001; Wan and Ong, 2005; Yun, 2011). An affective conflict is a disagreement between team members resulting from their personal likes and dislikes. Affective conflicts make team members feel negative emotions, irritation, suspicion, and discouragement towards other team members. Alleviating emerging conflicts is necessary for a team to continue its work, and at the same time affective conflicts are time consuming, especially in bigger teams (Mooney et al., 2007).

Affective conflicts reduce the willingness to cooperate and mutual understanding between team members (Papenhausen and Paraytiam, 2015). They decrease team effectiveness in three ways, by:

- limiting time for the discussion and thorough analysis;
- diminishing cognitive skills;
- antagonizing team members (Simons and Peterson, 1998).

Negative consequences of affective conflicts are as follows: decrease of motivation and satisfaction, worse team communication (Amason and Mooney, 1999; Badke-Schaub et al., 2010), and increasing will to change job (Medina et al., 2005). Moreover, a negative relation between affective conflicts in TMT and companies performance was confirmed (De Dreu and Weingart, 2003).

Buchholtz, Amason, and Rutherford (2005) claim that affective conflicts are the result of misinterpretations of other TMT members' intentions. The less structuralized work and the higher the uncertainty (like in case of TMT), the greater the risk of affective conflicts.

In Table 1 the results of some current research on affective conflicts in TMT are presented.

¹ Commercial Companies Code, Act of 15 September 2004, Journal of Laws No. 94, item 1037.

Table 1. Current studies on affective conflicts in TMT

Author (year)	Research method	Main constructs	Results
Amason and Sapienza (1997)	questionnaire		The bigger and the more diversified TMT, the more affective conflicts.
Simons and Peterson (1998)	telephone interview	– cognitive conflict – affective conflict – trust	Trust in TMT moderates the relation between cognitive and affective conflicts.
Amason and Mooney (1999)	questionnaire	– cognitive conflict – affective conflict – future company performance	Past company performance impacts TMT intragroup conflicts. There exists a relation between cognitive and affective conflicts in TMT. The effectiveness of decision making process is supported by cognitive conflicts and diminished by affective conflicts.
Mooney and Sonnenfeld (2001)	questionnaire	– cognitive conflict – affective conflict – TMT diversity	TMT diversity does not impact affective conflicts.
Buchholtz et al. (2005)	questionnaire	– control – involvement – affective conflict	Monitoring supervisory board work decreases affective conflicts. The higher involvement of board members, the greater the possibility of conflicts.
Walker et al. (2015)	questionnaire	– cognitive conflict – affective conflict – personality	There is no relation between personality differences and affective conflicts. There is a strong relation between cognitive and affective conflicts.

Source: Author's own elaboration based on literature review.

TMT effectiveness is the problem requiring further analysis with the reference not only to structural aspects, but also to TMT psychological and sociological functioning. Affective conflicts appear to deteriorate TMT performance, and that is why the conclusions on how to avoid or moderate them in TMT are of a great significance.

4. Research

The main objective of this study was to identify the relationship between affective conflicts in supervisory boards and the effectiveness of these teams. Moreover, structural and dynamic determinants of affective conflicts were examined. The main hypothesis (H1) assumed that affective conflicts reduce the effectiveness of supervisory boards. The next two hypotheses (H2 and H3) assume that accordingly structural features and group processes determine the level of affective conflicts.

Research variables covered three areas: structural characteristics of supervisory boards, group dynamics and boards' effectiveness. The following independent variables were used to describe the structure of supervisory boards: the size of the supervisory board, the share of women and men, gender diversity of the board (Blau Index), the share of board members with specific education (four areas of specialization were distinguished, i.e. technical, economic, legal and other), the diversity of fields of education (Blau Index), the share of board members with professional and academic titles / degrees, and the share of board members with experience in work in top management teams. In addition, the number of board meetings held per year was included as an organizational factor (the information was available in the case of a limited number of companies only). Data on the structure of supervisory boards was based on the studies of the resumes of board members (nearly 3,000 resumes were under scrutiny).

The examination of the group dynamics of supervisory boards covered the following group processes: affective conflicts, cognitive conflicts, group coherence, effort norms. Due to the lack of research methods available, own Group Dynamics Questionnaire for Supervisory Boards based on five-point Likert scale was used (Anonymity). The same Questionnaire was applied to collect data on the effectiveness of supervisory boards, including overall assessment of boards' effectiveness and quality of its decisions, as well as detailed assessments of the performance of particular tasks related to the supervisory and advisory role of the board.

The research was conducted among 46 out of 291 companies listed on the main market of the Warsaw Stock Exchange (Poland) from 2010 to 2013. Given low accessibility of supervisory board members, the selection of the sample was not random what must be taken into account at the stage of the analysis of the results. At the same time, it is worth noting that the size of the research sample does not differ significantly from the research samples used in other studies on TMT group processes.

5. Results

Given high complexity of the relations between the variables, structural equation modeling (path analysis and confirmatory factor analysis) was applied. The models presented in the article were selected from many tested models according to their fit to the real data. Goodness of fit was assessed based on the value of chi square, followed by descriptive indicators based on the theory of non-central distributions (RMSEA and adjusted Gamma index of the population) and the Akaike information criterion (AIC). Results that are statistically significant ($p < 0.05$) are marked with an asterisk (*).

The first hypothesis (H1) was tested with model H1. The goodness of fit of the constructed model is satisfactory (Chi square 3.921; P-value 0.417; df 4; RMSEA 0.000; IC 0.665; Adjusted Population Gamma Index 1.000) and the model was interpreted (Figure 1). Affective conflict negatively impacts supervisory board effectiveness, however the relation is statistically insignificant (P-value is equal to 0.140). Although hypothesis H1 was not confirmed, a clear trend of how affective conflict deteriorates supervisory board performance was identified.

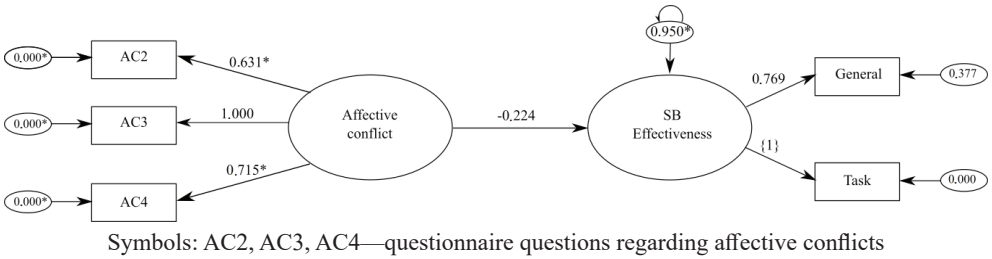


Figure 1. The relation between affective conflicts and supervisory board effectiveness (H1)

Source: Author’s own elaboration.

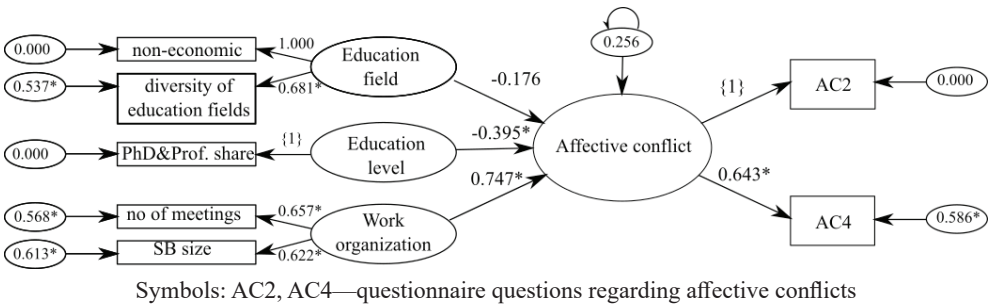


Figure 2. Structural determinants of affective conflicts in supervisory boards

Source: Author’s own elaboration.

In the next stage the impact of organizational and structural characteristics of supervisory boards on the occurrence of affective conflicts was examined. The model with the best goodness of fit (Chi square 15.156; P-value 0.298; df 13; RMSEA 0.000; AIC 1.737; Adjusted Population Gamma Index 1.000) is presented in Figure 2.

The analysis revealed that supervisory board work organization is the strongest determinant of affective conflicts (regression coefficient is 0.747). The larger the board and the more frequent the meetings, the higher the level of affective conflict. In other words, in more numerous teams and in teams sitting long hours together, the risk of discussing matters not relevant to the enterprise is higher.

A factor that significantly alleviates affective conflicts is the presence of board members with a PhD degree and higher academic degrees (regression coefficient is -0.395). This may be due to the fact that academics are more likely to avoid out-of-subject conversations. The relation was also confirmed with the Chi-Square test of independence (Figure 3 and Table 2).

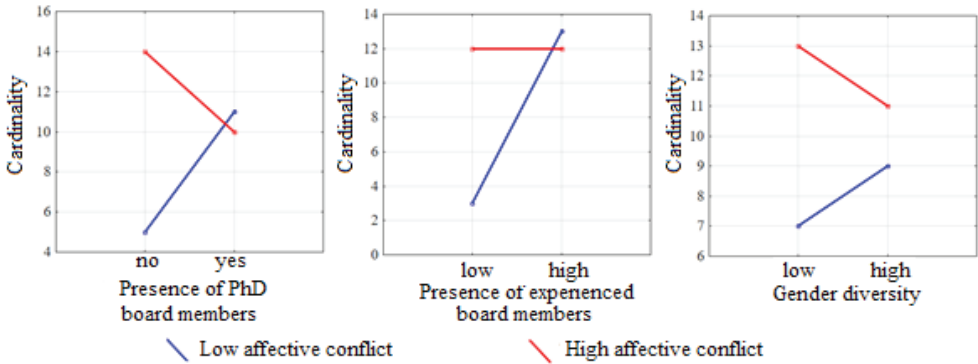


Figure 3. Relationship between affective conflicts and selected structural aspects of supervisory boards

Source: Author’s own elaboration.

Table 2. Relationship between affective conflicts and selected structural aspects of supervisory boards

	Gender diversity			Presence of PhD board members			Presence of experienced board members		
	Chi square	df	p	Chi square	df	p	Chi square	df	p
Pearson’s Chi square	0.417	df = 1	p = 0.52	2.824	df = 1	p = 0.09	4.000	df = 1	p = 0.05
Chi square ML	0.418	df = 1	p = 0.52	2.876	df = 1	p = 0.09	4.212	df = 1	p = 0.04
Yates’s Chi square	–			–0.266			2.778	df = 1	p = 0.10
Phi for 2×2 tables	–0.102			–0.412			–0.316		
Tetrachoric correlations	–0.162			0.257			–0.505		

Source: Author’s own elaboration.

Another factor under scrutiny was the experience in working in TMT. The results show that the presence of experienced board members decreases affective conflicts (the tetrachoric correlation coefficient is equal to -0.505). Moreover, given huge interest of researchers and practitioners in the problem of gender parity in TMT, the relation between affective conflicts and gender diversity was diagnosed. Neither the analysis of SEM models, nor of a twofold contingency table did not bring any insights to such a relation.

Summarizing, hypothesis H2 was confirmed as it is possible to distinguish structural characteristics of supervisory boards impacting affective conflicts.

In order to verify hypothesis H3, a model of relations between affective conflicts and other group processes was designed. The model meets minimal requirements, such as RMSEA < 0.08 (Chi square 24.489; P-value 0.178; df 19; RMSEA 0.070; AIC 1.912; Adjusted Population Gamma Index 0.952), and it was taken for interpretation (Figure 4).

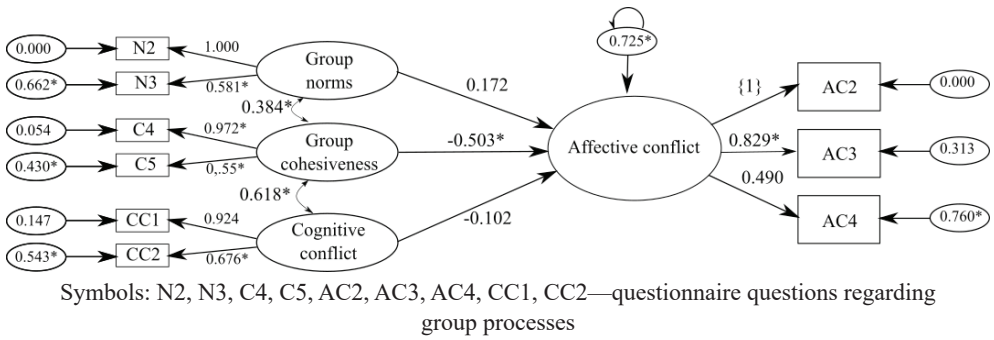


Figure 4. Dynamic determinants of affective conflicts in supervisory boards

Source: Author’s own elaboration.

The level of affective conflicts largely depends on supervisory board cohesiveness (regression coefficient is -0.503 and it is statistically significant). The decrease of team cohesiveness leads to more affective conflicts. It means that a strong sense of belonging to the team and positive relationships between supervisory board members reduce the risk of affective conflicts. The identification of such a relation confirmed hypothesis H3, as there is a group process that impacts affective conflicts.

To sum up, the conducted research partially confirmed the main hypothesis and fully confirmed supporting hypotheses. However, it must not be forgotten that the sample was small and not representative. Hence, the conclusions must be limited to the identification of trends, not of strong cause and effect relationships.

6. Discussion

The results of the presented study suggest that affective conflicts decrease supervisory boards performance (these conclusions are in accordance with the results by Amason and Mooney, 1999; Mooney et al., 2007). However, the relation was not verified as statistically significant.

Among determinants of affective conflicts, supervisory board work organization occurred to have crucial importance for affective conflicts. Big size of a board and high number of board meetings per year significantly increase the risk of affective conflicts. As this type of conflicts may deteriorate board’s performance it is worth reducing them in advance by moderating the meetings and making breaks during the discussions or postponing the discussion on contentious issues (Brockmann, 1996). The lack of reaction to affective conflicts may result in serious consequences for the team’s durability (Eisenhardt et al., 1997). Moreover, the number of supervisory board meetings should be limited to minimal time required to deal with substantive

problems (Murphy and McIntyre, 2007). For moderation of supervisory board functioning it is also important to build sense of belonging to a team as high team cohesiveness reduces affective conflicts. Another method is training and raising board members' awareness of this issue.

Finally, the results of the research can be used to design criterias for candidates for board members. It was observed that affective conflicts are alleviated by high diversity of board members educational background, the presence of board members with academic degrees and huge experience in TMT. Such a profile of board members is related to their greater focus on corporate problems discussed by a board. Contrary to common beliefs, gender does not impact the level of affective conflicts.

7. Conclusions

Identifying and shaping factors determining companies' performance related to the structure and dynamics of TMT becomes one of the key issues of Corporate Governance. The presented research is an example of interdisciplinary approach to TMT, and its main objective was to identify the relation between affective conflicts and the effectiveness of supervisory boards of public enterprises operating in Poland.

As the result, the importance of affective conflicts to supervisory boards performance was partially confirmed, as well as the significance of structural and functional determinants of these conflicts. Affective conflicts depend on a supervisory board size, the frequency of board meetings, the diversity of educational background, the presence of board members with academic degrees, the presence of board members experienced in TMT, and on team cohesiveness.

The main limitation of this research is the size of a sample. However, the reluctance of TMT members to participate in surveys is a common problem, and the size of samples is similar in case of other studies (ex. Amason and Sapienza, 1997; Amason and Mooney, 1999; Simons et al., 1999; Mooney and Sonnenfeld, 2001; Buchholtz et al., 2005).

The problem of affective conflicts was a side topic in a broader PhD dissertation project (Anonymity), and some of the directions of further studies have been already explored. Namely, the analysis of different types of conflicts showed that cognitive conflicts are of the greatest significance to TMT functioning and effectiveness. However, in future studies new factors could be included, for example the independence of supervisory board members.

The applied triangulation of research approaches and methods enabled indepth analysis of affective conflicts in supervisory boards. This provided the basis for practical tips regarding selecting candidates for supervisory boards, the organization and moderation of supervisory boards meetings, raising awareness of mechanisms of TMT functioning, and further directions in TMT studies.

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Konflikty afektywne jako determinanty efektywności rad nadzorczych

Abstrakt: Wprowadzenie „teorii wyższych szczebli” (ang. *the upper echelons theory*) przez Hambricka i Masona w 1984 roku wzbudziło zainteresowanie zespołami naczelnego kierownictwa jako kluczowymi decydentami w przedsiębiorstwie i ich wpływem na wyniki organizacji. Początkowe poszukiwanie relacji między strukturą tych zespołów a efektywnością spółek nie przyniosło jednoznacznych rezultatów, dlatego coraz więcej uwagi poświęca się funkcjonowaniu rad dyrektorów, zarządów i rad nadzorczych oraz procesom grupowym w tych zespołach. Jednym z takich procesów są konflikty afektywne rozumiane jako brak zgodności między członkami zespołu spowodowane osobistymi antypatiami. Głównym celem tego artykułu jest wzbogacenie rozważań teoretycznych o empiryczną identyfikację związku między

konfliktami afektywnymi w radach nadzorczych a skutecznością rad. Ponadto zbadano różne determinanty konfliktów afektywnych. Oprócz teoretycznej analizy problemu wartością tego artykułu jest prezentacja wyników własnych badań empirycznych przeprowadzonych wśród członków rad nadzorczych reprezentujących 46 spółek publicznych działających w Polsce. Wykazano, że konflikty afektywne obniżają efektywność rady nadzorczej, ale relacja ta nie jest istotna statystycznie. Zaobserwowano również, że najsilniejszymi determinantami konfliktów afektywnych są organizacja pracy, poziom wykształcenia członków rady oraz spójność zespołu. Wnioski wynikające z badań mogą być wykorzystane przy organizacji i moderacji posiedzeń rad nadzorczych oraz przy doborze kandydatów do rady.

Słowa kluczowe: rada nadzorcza, konflikt afektywny, efektywność

Use of the Marketing Information System in the enterprise as a basis for efficient management (on the example of the SME sector in the Subcarpathian Voivodeship)

Stanisław Ślusarczyk

University of Information
Technology and Management
in Rzeszow, Poland

E-mail: niscontoo@interia.pl
ORCID: 0000-0003-4474-8208

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Correspondence to:
Stanisław Ślusarczyk
Wyższa Szkoła Informatyki
i Zarządzania w Rzeszowie
Kolegium Zarządzania
Katedra Zarządzania
ul. mjr. H. Sucharskiego 2
35-225 Rzeszów, Poland
Tel.: +48 17 866 12 22

Abstract: Changes taking place in the business environment intensify uncertainty and are a source of potential risk. Achieving long-term and lasting success in the current times by the company, regardless of its size, requires an appropriate Marketing Information System. This system is assigned a special role in reducing uncertainty and risk and is an important basis for efficient and effective management of a modern enterprise. The Marketing Information System introduces adequate procedures, which serve in gathering, analysis, assessment and spread of needed, actual and precise information for persons responsible for taking marketing decisions. However, an essential element of MIS of modern enterprises is the marketing research subsystem. The managers' need for a variety of information comes from their task that is a preparation of competitive strategies. Those strategies are crucial in process of creation of company's market position. Moreover, the need of information is related to necessity of taking fast decisions by managers. The aim of the study is to analyze the activity of selected enterprises of the SME sector¹ in the application of the Marketing Information System and its elements such as: development of sales forecasts, use of the Internet as a source of information and as a form of advertizing. This goal was achieved based on the survey of literature and own research results. The survey was carried out in 2018 using a questionnaire method. The research covered the management of 208 enterprises in Subcarpathian Voivodeship (Poland). For the purposes of this study, in order to expand the comparative base, large companies were also included.

Keywords: Marketing Information System, marketing management, competitive advantage, SME, enterprises in Poland

¹ In the Act of 6 March 2018 on entrepreneurs—Entrepreneurs Act, no. 646) (Ustawa z dnia 6 marca 2018 r. Prawo przedsiębiorców) a microentrepreneur is deemed to be an entrepreneur who, in at least one year out of the last two financial years, met all of the following conditions: employed less than 10 employees on average and achieved annual net turnover from sales of goods, products and services and financial operations not exceeding the PLN equivalent of 2 million EUR, or the total assets of its balance sheet as at the end of one of those years did not exceed the PLN equivalent of 2 million EUR. A small enterprise is one that employed less than 50 employees on average per year and achieved an annual net turnover from sales of goods, products and services and financial operations not exceeding the PLN equivalent of 10 million EUR, or the sum of assets of its balance sheet as at the end of one of these years did not exceed the PLN equivalent of 10 million EUR. A medium enterprise is one that employed on average less than 250 employees per year and achieved an annual net turnover from the sale of goods, products and services and from financial operations not exceeding the equivalent of 50 million EUR, or the sum of assets of its balance sheet as at the end of one of those years not exceeding the equivalent of 43 million EUR in PLN—and which is not a micro or small enterprise.

1. Introduction

Modern companies operate in conditions of very strong competition and rapidly changing environment. Intense turbulence and the speed of changes taking place in the environment require managers to take adaptation measures. In order to perform their managerial tasks efficiently in enterprises, managers must take care of appropriate marketing instruments. The aim is to create conditions for the company to adapt to an increasingly turbulent environment.

Marketing management of a company is an internally coherent set of tools, the so-called 4P of marketing mix (product, price, promotion, place) (McDonald and Wilson, 2012, p. 28).² “Marketing management is when at least one of the parties to a potential exchange thinks about how to get the desired reactions from the other parties” (Kotler and Keller, 2012, p. 5). A characteristic principle of marketing management is to influence a specific market not with individual instruments, but with their appropriately shaped composition. This means that it is necessary to apply appropriate procedures for collecting and processing information. The study focuses on information aspects of marketing management.

The aim of the study is to analyze the activity of selected enterprises of the SME sector in the application of the Marketing Information System and its elements, such as: developing sales forecasts, using the Internet as a source of information and as a form of advertizing.

The introduction of the Marketing Information System by managers, in addition supported by IT systems, is to create proper ground for effective management (Szatkowski, 2016, p. 226).³ An important role in MIS is nowadays attributed to the Internet, which provides interactivity in marketing communication. It is an important source of information and an increasingly important tool for advertizing products of both large and small companies (Skowronek, 2012, p. 88; Bulska, 2015, p. 15).

Continuous and dynamic transformations that take place in the external environment of a modern company make increasingly higher demands on companies especially in terms of the quality of manufactured products, as well as the degree and speed of their adaptation to the constantly changing needs of customers (Nogalski and Niewiadomski, 2014, p. 232; Łobos, 2018, pp. 186–212; Galindo-Escamilla, 2019, p. 222). Nowadays it is difficult to imagine an efficient functioning of MIS in an enterprise without the Internet.

The aim of the paper is to present MIS as an important marketing management instrument. A well-functioning MIS in a company becomes an important basis for building its competitive advantage on the market. Therefore, such an important issue is the development of sales forecasts and reaching for modern communicators by the management to an increasing extent. Some companies have a “technically correct” potential, but not an effective MIS, and therefore it is more difficult for them to win in the market. Only complete use of the company’s existing resources and skills according to customer preferences creates such opportunities (Nogalski, 2011, p. 121). Thus, in the management of a modern company, such principles as: variance, synthesis of strict and intuitive methods, creative approach, continuity of work on strategy, general social point of view grow to the basic rank. Adhering to these principles requires that managers collect and process relevant information within the company. This is the best guarantee of good and effective communication between the company and the market environment.

² This is a classic marketing-mix concept, based on the so-called 4P formula developed by McCarthy in 1960.

³ The first MISs were created in the 1960s, initially in the largest American companies.

2. The Marketing Information System and its importance in improving business management

2.1. The essence and functions of marketing management

Marketing management involves a logical sequence of tasks that form the process of creating an overall concept of the company's market activities, which is defined in the marketing plan. That is why the management and control system, of which the Marketing Information System is an important element, plays such an essential role. Therefore, only full involvement of managers at different levels and in different organizational units of the company can lead to efficient and effective management.

The success of a company is strictly connected with the quality of management understood as the art of controlling processes and resources in a company to achieve its goals. Using the situation in the company's interest should be the guiding principle of good management. The success of a company is not a consequence of being accidentally in the right place, at the right time, but it is the result of a continuous analysis of the market environment, ending with choosing the right marketing strategy.

Marketing management is, on the one hand, an integral part of the company's management, as it means deliberate and conscious shaping of its entire market activity. On the other hand, it is a method that allows to strengthen the motivation of all managers and to create in them the awareness of participation in the creation of its achievements. Therefore, an important attribute of marketing management is the purposeful integration of activities, taking into account the interdependencies between them, which creates synergy effects. This ability is in contrast to other management systems that do not sufficiently ensure the extent and scope of inter-organizational coordination within the company. It is about the interaction of all levels of the company's organizational structure. A special role is assigned to marketing managers, who should coordinate the activities of other services in such a manner that they lead to the achievement of the company's objectives by achieving the desired degree of competitiveness in the long term. The essence of the company's market orientation manifests itself mainly in the fact that all employees have contact with the markets on which it operates.

Corporate social responsibility towards the environment is very important in marketing management. The market (business) thinking of managers must therefore also include environmental protection aspects. The care of managers for socially desirable solutions should always be signalled, emphasized in company policy.

Companies act in a socially responsible manner when they treat themselves as an integral part of society and accept profit as only one of the main objectives of the company, which also include: protection of the environment, ensuring the survival of the company and continuity of employment of their employees (Paliwoda-Matiolańska, 2009, p. 76; Kulowczuk, 2018, p. 180). This means that managers should consider economic and social priorities while making long-term strategic and investment decisions. This may have a positive impact on the economic performance of the company in the long term.

2.2. Marketing Information System (MIS) in company management

The leading role of marketing management is constituted by the fact that the basic prerequisites for decision-making processes are provided by information from systematic marketing research on the market, purchaser preferences and competitors' behaviour. Often the company has the information it needs, but it is dispersed across different cells of the company, not always easy to locate, sometimes mixed up in a mass of others, including unnecessary ones. Therefore, it is necessary to have a proper Marketing Information System that organizes this information appropriately (Duliniec, 1995, pp. 144–145). According to Elżbieta Duliniec, MIS's task is to provide information for the management of the entire marketing process in the company. It is about direct support of research and product development processes as well as management and analysis of purchaser needs (Unlod, 2001, p. 91).

MIS should be built in such a manner that it focuses attention on the basic goal. The information should focus on the key results, as only a small number of results decides about success. This is the so-called 80/20 rule, which also applies to information effectiveness.

In the presented MIS approaches, the importance of collecting, systematizing, processing, evaluating and using information from the analyzed market segment is stressed. An essential element of the MIS, namely the marketing research and in-depth analysis subsystem, which is essentially about identifying and resolving marketing and marketing management problems in a company, is missing.

Managers are required to develop their own set of necessary information corresponding to the market situation of the company and the established objectives. Thus, the accents may vary, but the most important thing is to ensure the best possible conditions for effective business management (Cisło and Koziół, 2004).

Decision-makers may receive some of the information by MIS on a permanent basis, some—on a periodic basis, and others—on an occasional basis. The effectiveness of company management is determined primarily by the data collected on an ongoing basis from sales reports, accounting records, sales representatives' reports, etc. External sources of information from economic journals, research and development centres, government reports, publications of chambers of commerce and industry, annual reports of competitors are also important. No less significant are periodical surveys, which allow in particular for the identification of decision-making problems. They are conducted regularly from time to time in order to measure the same phenomenon. On the contrary, occasional surveys are carried out on an irregular basis. Their aim is to meet the specific information needs of decision makers (Kędzior [ed.], 2005, p. 26).

Well selected information is the one that supports decision-making processes in the company by identifying risks and reducing the uncertainty of activities. "A well-made decision is at least 80% of information, 10% of inspiration (ingenuity) and 10% of manager's intuition" (Penc, 1994, pp. 83–84). In such a situation, the ability of the management to select the necessary knowledge is becoming increasingly important.

The information collected and organized in the Marketing Information System allows for a systematic assessment of the following aspects (Ślusarczyk, 2011, p. 175):

- Have the proper goals for the company been adopted and are the prerequisites for achieving them in the planned marketing strategy created?

- Are the managers of individual organizational units aware of their “contribution” to the implementation of the adopted marketing strategy?
- Do managers allow for situations in which valuable resources are engaged in activities that do not give hope of achieving the desired results?
- Do managers have a strong motivation to work and are they committed to achieving their goals? Do managers have the necessary knowledge and skills?
- Do managers allow for changes in the company in the future? If so, are they based on appropriate market research? What sources will the company profit from in the future, if the anticipated external opportunities and threats and the company’s strengths and weaknesses are taken into account?

It should be stressed that the introduction of MIS in an enterprise enables and facilitates using by managers such systems as:

- CRM (Relationship Management);
- CAD (Computer Aided Design);
- CAM (Computer Aided Manufacturing);
- MRPII/ERP (Manufacturing Resource Planning);
- FMSs (Flexible Manufacturing Systems).

By creating an important basis for the application of IT systems, MIS allows, on the one hand, for comprehensive communication of all company values and elements of its identity to the market environment through the use of coordinated marketing activities and, on the other hand, for a partnership-based response to the information coming from this environment.⁴

In a modern company, information is the fourth productive factor besides the human, material and financial factor (Cisło and Koziół, 2004). The need of using the most extensive information in the company is primarily due to the constantly emerging new market difficulties and growing risks. Managers are therefore faced with the important task of solving the emerging problems in a timely manner and minimizing the risk concerning the accuracy of their marketing decisions.

The collection and passing on of core information about the company and the environment in which it operates by managers to each other is the basis for the process of formulating a marketing strategy (Unlod, 2001, p. 91). It is not possible to create the desired strategy for the company when the consideration of all executives is not based on one and the same set of facts. The executive director’s managerial role in the process of analyzing the collected information is particularly important. He must create a climate of total honesty and self-criticism among the company management. Only under such conditions is it possible to choose the right target market and appropriate marketing management instruments. This has a strict impact on the efficiency of the company and its success on the market.

The creation of an atmosphere of mutual cooperation and common drive for success, as well as the wide application of marketing management instruments in the relationship between the management and the staff is an extremely important element of the company’s mar-

⁴ The surveys conducted in 2009 and 2018 concerned broadly understood marketing and innovation activity of small and medium enterprises in Subcarpathian Voivodeship (208 companies). They also concerned the use of MIS and its selected elements, such as: development of sales forecasts, use of Internet as a source of information and advertizing. In the second stage the author intends to examine the scope and degree of use of the systems: CRM, CAD, CAM, etc.

ket potential. It is the company's employees who are the ones who build and consolidate the competitive advantage. Companies that understand this dependence also pay great attention to shaping proper professional attitudes of their staff. Customers reject artificial communication and want to be treated seriously (Ślusarczyk, 2011, pp. 203–204). Only such an honest, natural dialogue with clients enables gathering information concerning their needs and wishes on the basis of which an offer which stands out from the competitors' offers will be defined. Precise estimation of the potential and dynamics of sales processes and profitability of the strategy in accordance with the mission and objectives of the company is the best "recipe" for success. That is why it is so important to continuously assess the recognized opportunities and factors creating the enterprise value. This means returning to the customer and observing the market culture of the company. All company employees must understand what customer value is about and how to realize this value. Therefore, the company should have an effective system for measuring the aspirations and expectations as well as the level of satisfaction of its clients and ought to make the results of the conducted research available to all its employees so that they are fully aware of the realized mission (Ślusarczyk, 2011, p. 199).

The challenge facing today's companies is to introduce a new management concept based on full awareness of the contribution of all company managers to its marketing management. This is not an easy task to perform and requires a longer time to change habits and make the employed company's managers aware of their new role of management in the market-product configuration. An important role in this process is attributed to information technologies and databases (Brady, Forrest and Mizerski, 2002, pp. 114–115; Ślusarczyk, Góra and Strojny [eds.], 2005, p. 53). They open the way for creating long-lasting, financially effective, individual relationships with clients. In an effort to target its activities more precisely to the individual customer needs, the company tries to collect data and create their demographic, media and consumption profiles. For this purpose, the company often uses direct marketing—such as mail catalogues—to reach customers more effectively.

The database of huge capacity allows companies to address virtually any questions to the data collection and perform almost immediate analyses. For example, a company can analyze the database to determine whether it has good sales perspectives. This is a huge step towards improving the marketing management of the company. This can be used to develop more effective, customer-focused marketing programmes to meet customers' needs. This is the right way to build a competitive advantage in relation to market rivals who do not use information analysis and information technology as a marketing management tool (Pomykalski, 2005, p. 145; Kuźniak, 2018, pp. 55–59).

This new market form of company management must be the answer to the growing requirements of today's customers who (Przybyłowski et al., 1998, p. 238; Kaplan and Norton, 2001, p. 175):

- want to receive offers more tailored to their individual needs;
- require more and more quality and value. They are willing to pay a higher price for higher quality;
- show a lower level of loyalty to sellers.

3. The use of MIS in the examined enterprises

3.1. Methodological notes—adopted indicator

The research covered the managerial personnel of 208 companies in Subcarpathian Voivodeship, divided into groups: micro, small, medium and large enterprises.⁵ A non-random selection method was used to determine the research sample. The questionnaire technique⁶ was used to examine:

- the use of MIS and its selected elements, such as: developing sales forecasts, using the Internet as a source of information and advertizing by enterprises in particular groups: micro, small, medium and large;
- managers' opinions on how the use of MIS affects the decision-making process.

The following indicators were adopted:

- percentage share of companies using MIS and selected elements of MIS, such as: development of sales forecasts, use of Internet as a source of information and forms of advertizing in particular groups;
- the percentage rate of evaluation of MIS support for the decision-making process.

Table 1. Subject of the survey questionnaire

Subject of the questionnaire research		Number of indications for companies				Percentage of indication for companies (%)			
Survey question ⁷	Variants of responses	Micro	Small	Medium	Large	Micro	Small	Medium	Large
1. Does your company use MIS?	yes	34	27	22	15	44.2	41.5	50.0	68.2
	no	43	38	22	7	55.8	58.5	50.0	31.8
2. Is the Internet used as a source of information?	yes	36	34	25	14	46.6	52.5	55.7	64.5
	no	41	31	19	8	53.4	47.5	44.3	35.5
3. Is the Internet used for advertizing?	yes	42	41	31	18	54.0	62.9	69.8	80.9
	no	35	24	13	4	46.0	37.1	30.2	19.1
4. Are sales forecasts being prepared?	yes	12	26	24	19	15.8	40.3	54.5	86.4
	no	65	39	20	3	84.2	59.7	45.5	13.6

⁵ For the purpose of this paper, large companies have also been included in the study in order to extend the comparative base.

⁶ The survey was conducted by postgraduate students of UITM in Rzeszow. The MIS study is only a small fragment of a broad research conducted in 2009 and 2018 on marketing and innovation activity. The results obtained were used in the author's books: *Aktywność marketingowa małych i średnich przedsiębiorstw* (1st ed. —Poltext, 2009; 2nd ed.—Poltext, 2011) and *Rozwój aktywności marketingowej małych i średnich przedsiębiorstw szansą na ich większą innowacyjność* (submitted for printing in 2019 at Poltext Publishing House).

⁷ All questions were addressed to the managers of selected 208 companies: micro, small, medium and large companies in the Subcarpathian Voivodeship.

5. Do you think that MIS supports the decision-making process?	insignificantly	32	32.7
	in an average degree	44	44.9
	significantly	22	22.4

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

As demonstrated by the data in Table 1, the marketing potential of the surveyed enterprises as concerns the rate of Internet use as a source of information and advertizing is at a medium level. In the case of such a marketing instrument as development of sales forecasts, it is much worse. The rate of MIS underutilization in individual groups of companies in the marketing communication process varies considerably. Namely, this indicator for micro companies was at the level of 55.8%, for small companies—58.5%, for medium companies—50.0% and for large companies—31.85%. The use of MIS in small and medium enterprises should be regarded as insufficient.⁸

Among those companies in which the Marketing Information System operates, the largest part—44.9% of the respondents is of the opinion that the decision-making process is supported by MIS to an average degree. Meanwhile, in every third company (32.7%) it was considered insignificant, and only 22.4%—significant (see Table 1).⁹

Sales forecasts

Sales planning in the SME sector is not given much importance. Therefore, it is more of an operational activity, consisting of the ongoing replenishment of inventories according to the rhythm of changes in demand, rather than trying to predict the level of demand in the medium and long term. The percentage of companies preparing sales forecasts in particular groups is as follows: in micro companies it is 15.8%, small—40.3%, medium—54.5% and large—86.4%. A vast majority of companies (87.5%) prepare a sales forecast for a very short period of time—up to one year. In the medium term, i.e. 1–3 years, every tenth company plans to sell its products (4.8%), while in the longer term—only 2.9% (including large enterprises). The managers also underestimate the activity in the area of product distinction. This remark refers mainly to micro enterprises, where this indicator was estimated at 42.3% and large enterprises—56.0%.

Internet usage

In micro enterprises, the usage of the Internet as a source of information and advertizing was reported respectively by 46.6% and 54.0% of respondents (Figure 1).

⁸ Large companies use MIS to an extent that can be considered satisfactory.

⁹ The presented data cover not only the SME sector, but also large companies.

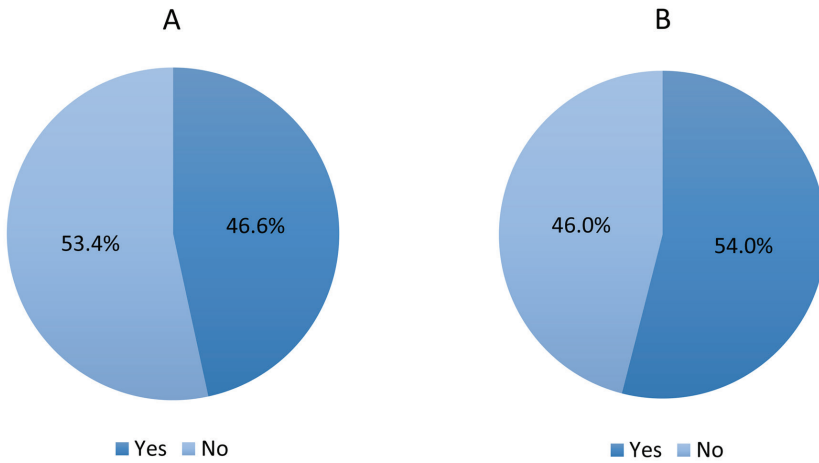


Figure 1. Micro enterprises: A—using the Internet as a source of information; B—using the Internet as a form of advertizing

Source: Author’s own elaboration based on the research results, 2018.

The activity of small enterprises in the scope of using the Internet as a source of information was at the level of 52.5%, while as advertizements—62.9% of respondents (Figure 2).

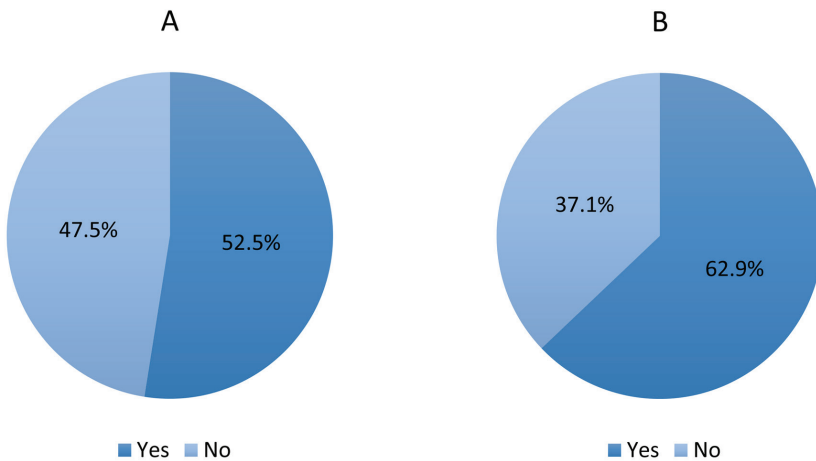


Figure 2. Small enterprises: A—using the Internet as a source of information; B—using the Internet as a form of advertizing

Source: Author’s own elaboration based on the research results, 2018.

In the group of medium enterprises, 55.7% of the respondents indicated the use of the Internet as a source of information and 69.8% of the respondents indicated it as source of an advertisement (Figure 3).

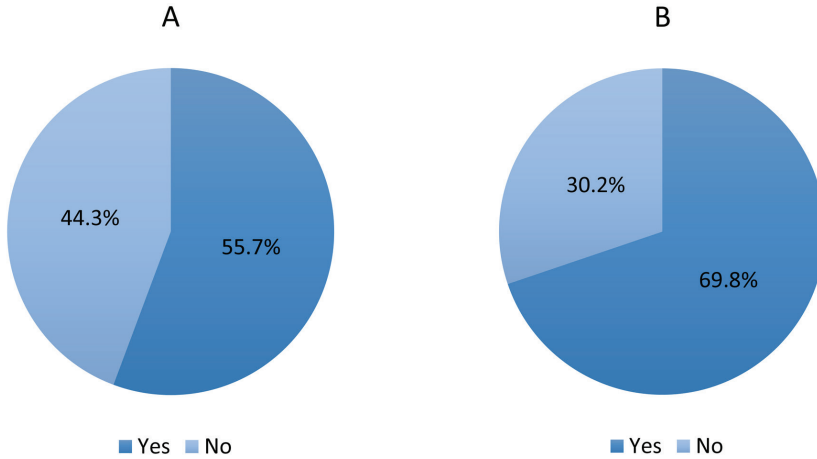


Figure 3. Medium-size enterprises: A—using the Internet as a source of information; B—using the Internet as a form of advertising

Source: Author's own elaboration based on the research results, 2018.

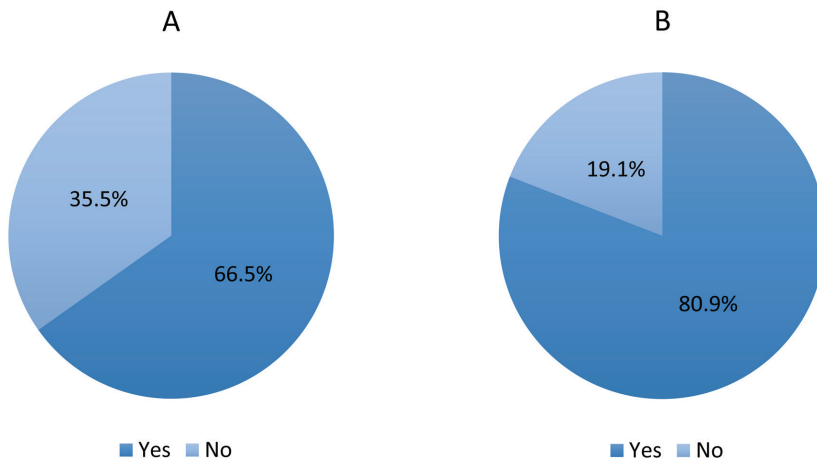


Figure 4. Large enterprises: A—using the Internet as a source of information; B—using the Internet as a form of advertising

Source: Author's own elaboration based on the research results, 2018.

The increasing use of the Internet by companies as a distribution channel is a positive trend. Studies confirm that companies are more likely to choose this distribution channel if they operate in a market with a high concentration of customers. On such a market, 35.9% of companies sell their products via the Internet. In a market with a low and medium concentration of customers, this percentage is twice as low and amounts to about 18%. It should also be emphasized that only 6.8% of enterprises had a separate unit responsible for electronic business.

4. Conclusion

Marketing theoreticians currently attribute an important role to the Marketing Information System in improving company management. It provides a flexible solution to the constantly accumulating problems in modern companies. Therefore, developing activity in this area, regardless of the size of the company, is of great importance.

The analyses presented in the article allow for the following conclusions:

1. The activity of the enterprises of the SME sector in the use of MIS and its elements, such as the development of sales forecasts, the use of the Internet as a source of information and as a form of advertising, is low.
2. The level of analyzed activity is differentiated: the lowest in the group of the smallest companies, slightly higher in small companies, and the highest in medium companies, but much lower compared to large companies.
3. Only large companies use MIS to an extent that can be considered satisfactory; however, this system lacks its essential element, i.e. the system of in-depth analyses and marketing research—the information flowing from it is crucial for making decisions.
4. It is worrying that a significant proportion of managers do not attach much importance to the use of MIS in decision-making processes. Namely, 32.3% of respondents considered that this support for decision-making processes is insignificant, 45.3%—that it is on average, and only 22.4%—that it is significant.
5. In order to increase the activity of small and medium enterprises in the use of MIS, it is necessary, according to the author of this study, to intensify training in this area, so that managers are more aware of the benefits that the introduction of MIS in their enterprises can bring them. There is also a need for the management of the smallest companies to be more convinced that it is not possible to manage a company well without a wider use of MIS.

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Wykorzystanie Systemu Informacji Marketingowej w przedsiębiorstwie jako instrumentu zarządzania (na przykładzie przedsiębiorstw sektora MŚP województwa podkarpackiego)

Abstrakt: Zmiany dokonujące się w otoczeniu przedsiębiorstw potęgują stany niepewności i są źródłem potencjalnego ryzyka. Osiągnięcie długofalowego i trwałego sukcesu w obecnych czasach przez przedsiębiorstwo niezależnie od jego wielkości wymaga odpowiedniego Systemu Informacji Marketingowej. Temu systemowi przypisuje się szczególną rolę w ograniczaniu niepewności i ryzyka i stanowi on ważną podstawę sprawnego i skutecznego zarządzania współczesnym przedsiębiorstwem. Wprowadza on bowiem odpowiednie procedury, które służą gromadzeniu, przetwarzaniu, analizowaniu, ocenie i udostępnianiu potrzebnych, aktualnych i dokładnych informacji dla osób podejmujących decyzje marketingowe. Jednakże zasadniczym elementem SIM nowoczesnych przedsiębiorstw jest podsystem badań marketingowych. Potrzeba dysponowania przez menedżerów szerokimi

i różnorodnymi informacjami wynika z faktu: opracowywania konkurencyjnych strategii, umożliwiających budowanie silnej pozycji rynkowej oraz konieczności szybkiego podejmowania decyzji. Celem opracowania jest analiza aktywności wybranych przedsiębiorstw sektora MŚP w stosowaniu Systemu Informacji Marketingowej oraz takich jego elementów jak: opracowywanie prognoz sprzedaży, wykorzystanie internetu jako źródła informacji oraz jako formy reklamy. Cel ten został zrealizowany na podstawie literatury przedmiotu oraz wyników badań własnych. Badanie przeprowadzono w 2018 roku metodą ankietową, techniką kwestionariuszową. Badaniami objęto kadre kierowniczą 208 przedsiębiorstw województwa podkarpackiego. Dla potrzeb niniejszego opracowania w celu rozszerzenia bazy porównawczej uwzględniono w badaniach także firmy duże.

Słowa kluczowe: System Informacji Marketingowej, zarządzanie marketingowe, przewaga konkurencyjna, sektor MŚP, przedsiębiorstwa w Polsce

Shaping the motivational potential of work in an organization

Leszek Koziół

Małopolska School of Economics in Tarnów, Poland

E-mail: leszek.kozioł@mwse.edu.pl
ORCID: 0000-0003-3321-9386

Renata Smoleń

Małopolska School of Economics in Tarnów, Poland

E-mail: renata.smolen@mwse.edu.pl
ORCID: 0000-0002-5513-4386

Abstract: This paper outlines selected concepts, factors and instruments, which may be used for motivating employees to work. It was found that work motivation depends on both the employee willingness and competences, their individual characteristics, as well as on the motivational characteristics of the work performed. The concept of work motivation therefore applies to the employee and to the company alike, becoming one of the components of their work potential. The motivational potential, coupled with the skill potential of the work, as well as working time, constitute work potential, which can be determined, then shaped and raised as appropriate. The main objective of this paper is to outline the concept of a system of evaluation of motivational potential of work in a company and the results of empirical studies. The identification and evaluation of motivational potential of work in the surveyed company was selected as the main research problem. The practical aim of the study was to identify the gap in the motivational potential of work, which constitutes the difference between the desired level of motivational potential of work and the actual level determined in the company. When measuring the motivation gap, the state of discrepancy between presented values is determined and the directions and ways of bridging this gap are indicated. To achieve the objectives of the study and verification of the hypotheses, the researchers used literature analysis, influence factor analysis, survey, expert study, case study and categorization technique. The use of these methodologies for evaluating the motivational potential of work in practice, or—more precisely—the information gathered thanks to these methodologies, can constitute the basis for modelling the growth capacity of a company and for recognizing the managerial pragmatism of the company in this area.

Keywords: work motivation, work potential, motivational potential of work diagnosis methodology

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Correspondence to:
Leszek Koziół
Małopolska Wyższa Szkoła
Ekonomiczna w Tarnowie
Katedra Zarządzania
ul. Waryńskiego 14
33-100 Tarnów, Poland
Tel.: +48 14 65 65 535

1. Introduction

Initially, in mid-twentieth century, psychologists focused mainly on the energetic aspect of motivation, biological sources of energy feeding motives, to later focus on its regulation and redirection (Madsen, 1980). They believed that motivation is

primarily experienced as a desire to do and achieve something (cf. Cofer and Appley, 1972, pp. 14–21). Motivation can generally be defined as “the totality of the motives in action, which activate, direct and regulate behaviour. It is defined as the readiness to act, to fulfil one’s needs and to achieve the goals one set for themselves” (Asanger [ed.], 2009, p. 38). It can also be described as a system of forces that induce people to behave in a certain way (Griffin, 2018, p. 514).

The notion of motivation is closely linked to the act of motivating. The existing texts on organization and management define this concept as one of the managerial functions, which entails “incentivizing and encouraging action with a range of incentives, measures and conditions for personal satisfaction and added benefit for the organization” (Penc, 1996, p. 25). The act of motivating is a conscious influence on people’s behaviour so that they go in the direction desired by the motivating entity and achieve the goals and complete the tasks entrusted by said entity (Pietroń-Pyszczek, 2007, p. 10). Michael Armstrong, on the other hand, believes that in the process of motivating, identifying and taking advantage of the influence factors it is crucial for making people behave in a certain way (Armstrong, 2005, p. 210). Another interesting and original definition of motivation and the act of motivating was offered by Falko Rheinberg, who described it as “activating orientation of current life pursuits toward a positively evaluated goal state” (Rheinberg, 2006, p. 18). This concise definition requires further clarification. The terms *activating orientation* and *positively evaluated goal state* need to be considered from a number of points of view. For example, one can say that motivation entails various states and behaviours, including wanting, making an effort, striving for something; however, it may also mean avoidance, aversion, fear of unwanted consequences and experiences. Thus, according to the author, the motivation to avoid something is different in many ways from the motivation stemming from wanting something. In this approach to motivation, the key question that needs to be answered is the issue of factors, which motivate people in both of the aforementioned situations.

However, people are not always eager to get active and carry on with certain activities solely because they are pursuing complex goals—they can also do so because of the satisfaction that accompanies these activities. Doing such activities becomes a kind of a goal in itself for the individual.

It is worth noting that the notion of motivation also refers to a situation where the motivating and motivated person is the same individual, in which case we are dealing with self-motivation. Self-motivation, or motivating oneself by reacting to one’s own behaviours, setting goals and strengthening one’s achievements is the most important component of various motivational phenomena (Bandura, 2007, p. 156).

The presented concepts and definitions of motivation define the mechanisms that stimulate the activation, direction, maintenance and cessation of a behaviour, they do not constitute a homogeneous whole. The notion of motivation describes both simple and complex mechanisms of behaviour, it concerns both external and internal mechanisms, affective and cognitive, as well as homeostatic and heterostatic processes (cf. Waszczak, 2010).

Depending on economic, social or individual differences resulting from personality traits and experiences, people’s personal actions are guided by various motivations, motivation factors and incentives.¹

¹ Motivations, including motivation factors, incentives, needs and tasks can be defined as any change in human environment (for example a change in the situation of an employee) that causes or changes the motivation of their action.

In the context of studies on motivation characterized by the absence of intentional regulation, a type of motivation described as amotivation can also be identified. According to E. L. Deci and R. Ryan, the notion of amotivation denotes a state, in which an individual does not perceive the link between their behaviour and the result that is a consequence of that behaviour. In clinical terms, amotivation syndrome entails reluctance to be active and participate in social situations, it manifests itself as a state of apathy caused by various factors such as the situation of the individual, their relations with their immediate circles, as well as psychoactive substances (Gagné and Deci, 2005, p. 336; Ryan and Deci, 2000, p. 611).

An activity can be initiated by an internal motive, and as a result, it is free and effective, because the performing individual drives it and gets involved in the activity. In the work environment, this motive results from important psychological needs of the individual, which stem from the content of their work, such as the sense of autonomy, importance of the task, competence, feedback, the need to have relations with other people, interest—in short, drawing satisfaction from it.

Activity can also be initiated by an external incentive (for example a prize), but performing it does not, in any case, evoke pleasant feelings.

In both situations, the activity of the individual is geared towards achieving a goal, the essential component of motivation, and said activity is only an instrument used to achieve that goal. Incentives stemming from the activity itself are usually less attractive than those following the result of achieving the goal. If an attractive reward is associated with achieving the goal, an individual can endure performing even unpleasant activities (Waszczak, p. 16); however, it is more beneficial if the individual draws the satisfaction associated with these activities.

The theory coined by F. Herzberg was a major contribution to the development of knowledge about motivation to work, especially in the study of motivation factors. He outlined a hypothesis, according to which satisfaction and dissatisfaction are caused by fundamentally different factors in the working environment.² He referred to the factors which—when they occur—cause satisfaction as *motivators*, while those whose absence causes dissatisfaction with work he called *hygiene factors*. Achievements, recognition, awards, promotion, job content, personal development opportunities, responsibility are all recognized as motivators. The hygiene factors, in turn, include company policy and management, technical supervision, interpersonal relations, remuneration, work safety, working conditions and working time, as well as benefits and position.

According to this theory, it is possible to increase job satisfaction, even if dissatisfaction does not decrease, as well as the other way around. Admittedly, Herzberg's theory has been subject to harsh criticism³, but researchers working on the subject admit that his theory has contributed to the development of research methods concerning motivation to work, by stating that there are two continua—satisfaction and dissatisfaction with work, existing independently of each other, and it has also provided additional arguments concerning the links between job satisfaction and employee productivity.

² Previous studies employed the concept of work satisfaction, which was presented in a one-dimensional space model. Satisfaction and dissatisfaction with work were treated as opposites on the same continuum—the assumption was that if a given factor has an added value for the employee, its absence has a negative value and vice versa.

³ The two sets of motivational factors introduced by F. Herzberg are recognized differently by various employee categories. Some hygiene factors can be treated as motivators, some people may also believe the opposite.

More recent studies have shown that there are other factors that motivate people to work (other than motivators and hygiene factors), namely demotivators, whose vector is fundamentally different from other factors. So far, studies on demotivation are scarce. The authors point to various and numerous factors demotivating people to work.⁴ They mostly stem from workplace alienation, organizational and management errors, as well as vices of the human nature.

The presented approach to the study of motivation to work, as opposed to Maslow's concept of needs and Herzberg's theory, takes into account all kinds of factors that make up the perception of workplace as determinants (characteristics of work) of the variability of attitudes and beliefs towards work, influencing employee's organizational behaviours. The research thus focuses on the following areas (Koziół, 2011; Koziół and Koziół, 2016):

- work motivation factors defined as motivators⁵, which take a positive form, especially when an individual becomes aware of the possibilities for satisfying their needs (such as rewards, flexible working time, prospects for personal development);
- factors stemming from working conditions, work organization and human resources policy that cause frustration and prevent employees from getting fully engaged in professional activities are presented and understood as demotivators. They constitute a negative form of motivation because they contribute to the deterioration of an individual's state or the threat of such deterioration. They are expressed in the form of a sense of lack of something, problems, annoyances, troubles, anxieties and many more, and as such, they are a source of stress. The tension associated with these factors is the higher the stronger the harmful factor, and the longer its duration;
- if the combination of all the factors results in an optimal situation for the individual, according to their personal needs, principles, aspirations, standards and so on, the tension is concealed. As such, it does not cause any significant changes in the state of the body; however, it makes the individual more susceptible to stress factors. This type of factors are determined to be hygiene factors. If an individual's situation remains different from their optimal situation, such a discrepancy may lead to negative motivational tension. This can lead to an active form, which may result in the employee quitting their job.

The motivational potential of work (MPW) depends on the willingness and ability of the employee and their individual characteristics, as well as on the motivational characteristics of the work they perform (cf. Sajkiewicz, 1995; Gableta, 2000; Rybak, 2000; Reilly and Williams, 2009; Białas, 2013; Czerniachowicz, 2014). It encompasses motivation factors with different vectors and instruments for shaping working conditions and organizational relations in the context of motivation for work. It refers to the company as a whole and to individual employees. It is also one of the components of work potential. It may seem obvious that every work has a different motivational potential, but in essence, said potential can be determined, then shaped and raised as appropriate. The importance of the MPW stems from

⁴ To read more on the subject, see: Steward (ed.), 2002, p. 245; Smoleński, 1999, p. 214; Kozińska and Szybisz, 2004, p. 8; Adair, 2000, pp. 158–159; Stelmach, 2005, p. 98.

⁵ Motivators are an essential element of the incentive system in an organization. It is assumed that the incentive system is a set of deliberately selected and logically interconnected motivators, which form a coherent whole that takes into account the deliberate and achievable needs and expectations of managers and employees.

the fact that it determines the results of work, which are also influenced by the qualification potential and resources necessary for carrying out the work. The latter two factors are easy to correct, but insufficient or inadequate motivation for work is often a problem. Determining the level of motivation and then controlling its development can be difficult, especially given that it is an elusive, ever-changing concept for practitioners. The presented concept of MPW may prove to be a useful tool for identifying and shaping motivation potential in a company.

The definition of the potential of work requires referring to the whole potential of people working at a particular time in an organization (Gableta, 1998, p. 12). It comprises qualification potential, motivation to work, as well as working time, or the quantitative dimension of work potential (Sajkiewicz, 1995, p. 7).

Work potential, which is synonymous with human capital, can be considered on a micro-economic scale and therefore concerns the company and the employee alike. It constitutes a component of the production potential as the current and future ability to perform the assumed tasks and solve the problem of the company's growth, as well as improve its competitive position on the market.

2. Concept hypotheses and study process stages

The aim of the article is to present the concept of the MPW evaluation system in a company and to present the results of empirical studies. The identification and evaluation of the MPW in the surveyed company constituted the main research problem.

The motivational potential of work is conditioned by external factors, which we may influence to a limited extent, as well as, above all, by internal factors; the internal factors of the MPW were used as the subject of analysis, while the activity and growth of the company serves as the benchmark. In particular, attention was paid to the company's working relations and conditions, as well as work organization.

The practical aim of the study was to identify the gap in the motivational potential of work, which constitutes the difference between the desired level of motivational potential of work and the actual level determined in the company. When measuring the gap, the state of the discrepancy between the presented values is determined and the directions and ways of bridging this gap are indicated.

The research methods used to achieve the objectives of the study included analysis of the results of previous studies, impact factor analysis, survey, expert evaluation, case study and categorization technique.

Stages of the study procedure:

- selection of evaluation criteria;
- partial MPW measurements;
- aggregated MPW evaluation;
- company categorization;
- MPW assessment—case study.

4. Motivational potential of work assessment methodology

4.1. Evaluation criteria selection

The set of determinants is virtually unlimited. Only a person can decide what motive influences their work, which is why the identification, measurement and categorization of factors requires great care in analyzing the statements of respondents, especially since the decision to start and continue working depends on a combination of many of them. One of the selection criteria for MPW determinants were the benefits of work obtained by the employee (employee welfare) and the productivity, competitiveness and growth of the company. The numerous variables concerning the organization's environment and resources were analyzed to identify impact factors, which can affect the motivation for work and making up its motivational potential. The identification process entailed using several different sources of information, including statistical data, special reports, previous study results and expert opinions, feedback from managerial staff and human resource management specialists of the surveyed companies. As the result, 30 determinants of MPW growth were identified as the component of the company's production potential and employee welfare, 10 in each of the groups of factors—motivators, hygiene factors and demotivators (Table 2).

4.2. Motivational potential of work measurement

The measurement of the motivational potential of work is a verification assessment, which entails comparing the actual state with the adopted model. The assessment formulas make it possible to determine the degree of intensity (severity) of the characteristics constituting the assessment criteria. The description of the degree of intensity of the given characteristic was determined on a scale from 1 to 5, where 1 meant hardly useful, 5 stood for very useful, and lack of response was marked as 0.

The measurement of motivational potential of work can be presented in an aggregate form. Aggregate assessment combines individual assessment criteria into one cohesive whole. The overall indicator of a motivational potential of work at a company can be calculated using the following formula:

$$MPW = \frac{aW_a + bW_b + cW_c + dW_d + eW_e + fW_f + gW_g + hW_h + iW_i + jW_j}{W_a + W_b + \dots + W_j}$$

where:

MPW—value of the motivational potential of work index

a, \dots, j —criteria symbols.

W_a, \dots, W_j —criteria weights.

The criteria can be further extended and adjusted in line with the objectives set out in the organization's strategy and the well-being of employees.

4.3. Company categorization

The basis for the categorization of a company is the result of an aggregated assessment of its MPW. The adopted hierarchical scopes of the MPW models were presented in the following Tables 1, 2, 3.

Table 1. Hierarchical intervals of the motivational potential of work index for motivators

Category	Scoring: motivators	
A	4.00–5.00	Benchmark
B	3.00–3.99	Condition of high usability
C	2.00–2.99	Useable condition
D	1.00–1.99	Unusable condition

Source: Authors' own elaboration.

Unusable condition in this case is the state of fulfilment of a function, in this case the motivational potential of work, which does not contribute to the development of work potential.

Useable condition for the purpose of this study is a degree of fulfilment of a function that is greater than or equal to the conventionally accepted sufficient degree of the MPW function.

Condition of high usability is the proper quality of the MPW function. The benchmark is the ideal level for fulfilling the MPW functions.

Table 2. Hierarchical ranges of the motivational potential of work index for hygiene factors

Category	Scoring: hygiene factors	
A	2.51–3.50	Benchmark
B	2.00–2.49 or 3.50–3.99	Condition of high usability
C	1.50–1.99 or 4.00–4.49	Useable condition
D	1.00–1.49 or 4.50–5.00	Unusable condition

Source: Authors' own elaboration.

Table 3. Hierarchical intervals of the motivational potential of work index for demotivators

Category	Scoring: demotivators	
A	1.00–1.99	Benchmark
B	2.00–2.99	Condition of high usability
C	3.00–3.99	Useable condition
D	4.00–5.00	Unusable condition

Source: Authors' own elaboration.

5. Evaluation of motivational potential of work in a company—case study

The aim of the analysis presented in this part of the paper was to verify the concept of motivational potential of work in an organization and to present the results of empirical studies. In the course of the study, the authors established cooperation with a company operating in the modern business services sector, whose management agreed to provide relevant data and conduct a survey among employees. 60 completed questionnaires were collected in total. The results of analytical work (surveys) are outlined in Table 4, which shows the calculated average degree of intensity of a given characteristic (assessment criterion) of the company's motivational potential of work, including a partial and aggregate assessment of motivational potential of work.

Table 4. Summary of criteria for assessing the company's motivational potential of work

Criterion symbol	Motivational potential of work assessment criteria	Weight (W) [*]	Intensity of the characteristic (in %)					Average degree
			1	2	3	4	5	
Motivators								
<i>a</i>	Cash, prizes, bonuses	1	8.333	41.667	33.333	8.333	8.333	2.67
<i>b</i>	Praise, awards, recognition	1	16.667	50.000	25.00	8.333	0.000	2.25
<i>c</i>	Chance of promotion	2	8.333	33.333	16.667	25.00	16.667	3.08
<i>d</i>	Prospects for personal development	3	8.333	33.333	16.667	33.333	8.333	3.00
<i>e</i>	Additional benefits, rich social package	1	8.333	58.333	8.333	16.667	8.333	2.58
<i>f</i>	Training provided by the employer	2	16.667	8.333	25.00	41.667	8.333	3.17
<i>g</i>	Flexible working hours	3	0.000	0.000	25.00	66.67	8.333	3.83
<i>h</i>	Variety of tasks performed	3	0.000	8.333	41.667	41.667	8.333	3.50
<i>i</i>	Work stability	2	0.000	8.333	41.667	33.333	16.667	3.58
<i>j</i>	Prestige of the workplace	1	0.000	8.333	33.333	50.00	8.333	3.58
Aggregate result of the average MPW assessment in the case of motivators								3.25
Hygiene factors								
<i>a</i>	Responsibility for the performed work	3	0.000	0.000	16.667	66.667	16.667	4.00
<i>b</i>	Working time	3	0.000	0.000	58.333	41.667	0.000	3.42
<i>c</i>	Salary, remuneration	2	0.000	25.000	41.667	33.333	0.000	3.08
<i>d</i>	Atmosphere at work	2	0.000	25.000	33.333	33.333	8.333	3.25

<i>e</i>	Management control and supervision	1	0.000	16.667	25.000	41.667	16.667	3.58
<i>f</i>	Workload	3	0.000	25.000	25.000	33.333	16.667	3.42
<i>g</i>	Principles and policy of the organizational unit	2	8.333	0.000	83.333	8.333	0.000	2.92
<i>h</i>	Workplace equipment	2	0.000	8.333	25.000	41.667	25.000	3.83
<i>i</i>	Health and safety conditions	1	0.000	8.333	0.000	75.000	16.667	4.00
<i>j</i>	Workplace appearance, comfort, functionality	1	0.000	0.000	33.333	50.000	16.667	3.83
Aggregate result of the average MPW assessment in the case of hygiene factors								3.50
Demotivators								
<i>a</i>	Conclusion of short-term contracts with employees	1	25.000	33.333	16.667	16.667	8.333	2.50
<i>b</i>	Rigid rules prevailing in the organization	1	8.333	33.333	41.667	16.667	0.000	2.67
<i>c</i>	Immoral behaviour of management	1	25.000	41.667	25.000	8.333	0.000	2.17
<i>d</i>	Harassment	1	33.333	58.333	0.000	8.333	0.000	1.83
<i>e</i>	Work beyond employee capabilities	1	8.333	41.667	25.000	25.000	0.000	2.67
<i>f</i>	The need to act against the employee's beliefs	1	16.667	33.333	50.000	0.000	0.000	2.33
<i>g</i>	Nepotism	1	41.667	41.667	16.667	0.000	0.000	1.75
<i>h</i>	Public and/or unfounded criticism	1	25.000	41.667	25.000	8.333	0.000	2.17
<i>i</i>	Loss of bonuses or part of remuneration	1	50.000	33.333	8.333	8.333	0.000	1.75
<i>j</i>	Tasks too difficult to perform	1	16.667	16.667	58.333	8.333	0.000	2.58
Aggregate result of the average MPW assessment in the case of demotivators								2.24

* N o t e: The weights of specific criteria for the examined enterprise were estimated by the authors.

S o u r c e: Authors' own elaboration, based on Koziol and Koziol, 2016; Smoleń, 2020.

Table 5. Partial MPW assessment

Category	Partial result of factor assessment		
	Motivators	Hygiene factors	Demotivators
A	—	working time; salary, remuneration; absenteeism; workload; company policy	harassment; nepotism; loss of bonuses or part of remuneration
B	prospects for personal development; benefits; training; flexible working hours; variety of tasks performed	control and supervision; workplace equipment; workplace look and feel	conclusion of short-term contracts with employees; rigid rules in the organization; immoral behaviour of management
C	cash, bonuses; praise, mentions; chance of promotion; work stability; workplace prestige	responsibility for the work performed; health and safety conditions	—
D	—	—	—

Source: Authors' own elaboration.

The analysis of the results collated in Table 4 indicates that the aggregate score of the average MPW assessment for motivational factors falls in the B category with a value of 3.25, described as condition of high usability, the aggregate score of the average MPW assessment in the case of hygiene factors falls in category B with a value of 3.50, just like the aggregate score of the average MPW assessment for demotivational factors, which has a condition of high usability with a value of 2.24.

The analysis of partial results is presented in Table 5. Taking into account the partial result of the assessment of the MPW factor in the area of motivators, it is noteworthy that no benchmark was obtained for any of the characteristics. The degree of intensity of the factor indicates that flexible working hours, job stability, workplace prestige, variety of tasks performed and training opportunities were deemed highly useful (category B), while others, including cash, bonuses; praises, mentions, compliments, chance of promotion; work stability; workplace prestige, fell into category C; no characteristic has been deemed useless by the respondents, and other characteristics are considered useful (cf. Table 5 and Table 2).

Several hygiene factors assessed by the employees of the analyzed company were assessed as benchmarks, including working time, remuneration, atmosphere at work, workload, principles and policy of the organizational unit. Highly useful characteristics, on the other hand, include control and supervision of the management; look and feel of the workplace, functionality; workplace equipment; while other characteristics, including responsibility for the performed work, as well as workplace health and safety were assessed in the useful range—category C (cf. Table 5 and Table 2).

Demotivators constitute a negative form of motivation, since they contribute to the deterioration of an individual's state or the threat of such deterioration. In the presented analysis, the surveyed employees of the company indicated harassment, nepotism, loss of bonuses or

part of remuneration as benchmarks. Other characteristics were assessed as highly useful, including conclusion of short-term contracts with employees, rigid rules in the organization, immoral behaviour of management, working beyond the employee's means, public or unfounded criticism, the need to act against the employee's beliefs, as well as too difficult tasks (cf. Table 4 and Table 3).

Table 6. Aggregate assessment of the motivational potential of work

Description	Aggregate assessment result	Category
Motivators	3.25	Condition of high usability B
Hygiene factors	3.50	Condition of high usability B
Demotivators	2.24	Condition of high usability B
Company categorization	BBB	Condition of high usability

Source: Authors' own elaboration.

The summary of the assessment of the MPW of the analyzed company is presented in a detailed manner in Table 6, which illustrates the categorization of individual assessment criteria in the following order: motivators, hygiene factors and demotivators, which all fall within the area of highly useful category B (cf. Table 6).

The results of the study presented in the table constitute the basis for forecasting practical corrective actions in the analyzed company. The assessment of motivation factors in the area of particular characteristics of demotivators may contribute to modification of the existing working rules or developing new workplace regulations, as well as company's code of ethics, which may include measures concerning the policies and rules in the organization, as well as outline the support in the cases where employees are given too difficult tasks, as well as tasks conflicting with their beliefs. In the area of motivators, criteria of praise, mentions or other tokens of appreciation of managers towards employees can be identified, alongside with a professional development plan and employee promotion plan, along with a working schedule that ensures that all tasks can be performed. A clear human resources policy, which instils a sense of job stability, good atmosphere at work and remuneration, which are commonly believed to be too low, are not without their significance as well. The part of the organizational rules which deals with responsibility for tasks and activities over which employees have only limited influence also needs to be changed. In the area of workplace health and safety, the employees believe that it is necessary to improve comfort at the workplace by installing air conditioning, as well as reducing the density of workplaces in the room.

6. Conclusion

The basis for the concept of analysis and reconstruction of the MPW is the process of raising and shaping competences, as well as motivation of employees' work and organizational knowledge accumulated by the company in the process of organizational learning. These competences and abilities, coupled with organizational engagement allow for effective and sustainable use of work potential for the company's ongoing operations. This process, which brings about

a change in the behaviour of these actors (employees, organizations and external stakeholders), will prove to be a sustainable element used for improving the efficiency and competitiveness, thus stimulating the growth of the company now, and even more so in the future.

If concepts in the field of work motivation, as well as the motivational potential of work, are not only to be developed from the academic standpoint, but also used in actual working environment, a diagnostic system is needed to capture the relevant components (factors) of the motivational process, and on the other hand it needs to remain transparent and clear.

Taking into account the above, it can be assumed that it is both necessary and possible to develop a methodology for diagnosing the employee motivation systems in the company, the subject and scope of which would include motivators, hygiene factors and demotivators. The practical results of this research should form the foundations for improving the incentive system and appropriate pragmatic economic approach. The defined motivators can be useful for building an incentive system within the company's collective bargaining agreement; hygiene factors can be employed in shaping the workplace regulations, while demotivators can form the basis for the organization's code of ethics. As we can see, the results of a study designed in such a way may prove beneficial for the development of motivation theory, the theory of work potential development and—more importantly—they can be used in the actual operations of companies and institutions to improve their incentive systems and working systems.

The use of this methodology for evaluating the motivational potential of work in company's operation, or—more precisely—the information gathered thanks to these methodologies, can constitute the basis for modelling the growth capacity of a company and for recognizing the managerial pragmatism of the company in this area.

This concept may be particularly useful for modern enterprises, which operate in the knowledge-based economy. However, it has a number of limitations. The presented model of motivational potential assessment does not include external factors, including market forces and institutional factors, which also affect this potential in certain ways. The study also did not cover obstacles curbing the growth of the motivational potential of work resulting from the individual characteristics of the employee. Nevertheless, the described methodology of assessing motivational potential of work seems to be a successful attempt at finding an entrepreneurial and innovative basis for the issues of raising the productivity of an organization based on knowledge and dynamic innovative abilities.

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Kształtowanie motywacyjnego potencjału pracy w organizacji

Abstrakt: W artykule przedstawiono wybrane koncepcje, czynniki i instrumenty motywacji pracy pracowników. Stwierdzono, że zależy ona od chęci i możliwości pracownika, od jego indywidualnych cech, ale także od charakterystyki pracy, którą wykonuje. Motywacja pracy odnosi się więc do pracownika i do przedsiębiorstwa. Stanowi składową jego potencjału pracy. Potencjał motywacyjny wraz z potencjałem kwalifikacyjnym pracy, jak również z czasem pracy stanowią potencjał pracy – który można określić i następnie odpowiednio kształtować, podnosić. Celem artykułu jest prezentacja koncepcji systemu oceny motywacyjnego potencjału pracy w przedsiębiorstwie oraz wyników badań empirycznych. Jako problem badań przyjęto identyfikację i ocenę motywacyjnego potencjału pracy w badanym przedsiębiorstwie. Celem praktycznym

badania jest rozpoznanie luki motywacyjnego potencjału pracy, która jest różnicą pomiędzy pożądanym a posiadanym przez przedsiębiorstwo poziomem motywacyjnego potencjału pracy. W trakcie pomiaru luki motywacyjnej określa się, jaki jest stan rozbieżności między wymienionymi wielkościami, oraz wskazuje się kierunki i sposoby niwelacji tej luki. Do realizacji celów pracy i weryfikacji też zastosowano metody badawcze: analizę literatury, analizę czynników wpływu, ankietę, badania eksperckie, analizę przypadku i technikę kategoryzacji. Wykorzystanie tych metod oceny motywacyjnego potencjału pracy w praktyce, a dokładnie zebrane za ich pomocą informacje mogą stanowić podstawę modelowania zdolności rozwojowej przedsiębiorstwa i rozpoznanie pragmatyki menedżerskiej przedsiębiorstwa w tym zakresie.

Słowa kluczowe: motywacja pracy, potencjał pracy, metoda diagnozowania motywacyjnego potencjału pracy

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