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Socio-Cultural Adaptation of International Students of Master Programme “Information and Electrical Engineering” at Hochschule Wismar

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ABSTRACT

*Global trends in modern economics emphasize higher education internalization. As a means of higher education internalization, Master programme “Information and Electrical Engineering” for international students at Hochschule Wismar (Germany) has been implemented since 2016. However, socio-cultural adaptation of international students of Master programme “Information and Electrical Engineering at Hochschule Wismar has not been analysed. The **purpose of the work** is to analyse theoretically and empirically socio-cultural adaptation of international students underpinning elaboration of a new research question. The **research methodology** comprises the study of the meaning of the key concepts of “international students”, “adaptation”, “social adaptation” and “socio-cultural adaptation”. The case study research was applied. The empirical study was carried out at Hochschule Wismar in 2016-2018. Observation served as the basis for data collection. The findings of the empirical study allow concluding that culture norms and values of international students and educators of Master programme “Information and Electrical Engineering” at Hochschule Wismar are different. Directions of further research are proposed. The novel contribution of the paper is the newly formulated research question.*

Keywords: *International students, Higher engineering education, Adaptation, Social adaptation, Socio-cultural adaptation.*

INTRODUCTION

Due to a number of reasons such as competitiveness, innovation, demographic situation, labour market and others (Ahrens, Grünwald, Bassus, Andreeva, Zaščerinska, Melnikova, 2018), global trends in modern economics emphasize higher education internalization.

With the internationalization of higher education, the university becomes an international enterprise where students coming from different countries gather together to pursue knowledge and skills (Richardson & McKenna, 2001). Students from overseas stepping into a foreign country differing from their original culture, may also confront those challenges and obstacles both in academic work and social integration.

By a means of higher engineering education internalization, Master programmes for international students are meant. Theoretical framework on master programme for international students has been elaborated (Ahrens, Gruenwald, Bassus, Zaščerinska, Melnikova, 2017):

- Reasons for emergence of European higher education programmes for international students,
- Language proficiency and problems,
- Impact of European higher education programmes for international students, and
- Qualification recognition (European Credit Transfer System (ECTS) in Europe including Germany

Master programme for international students ensures economic resources that influence the regional economics (Ahrens, Grünwald, Bassus, Andreeva, Zaščerinska, Melnikova, 2018). In particular, Master programme “Information and Electrical Engineering” for international students at Hochschule Wismar implemented since 2016, promotes such economic resources that influence the regional economics as labour and entrepreneurship (Ahrens, Grünwald, Bassus, Andreeva, Zaščerinska, Melnikova, 2018).

European universities identify international students as “a third-country national accepted by an establishment of higher education and admitted to the territory of a Member State to pursue as his/her main activity a full-time course of study leading to a higher education qualification recognized by the Member State, (...) which may cover a preparatory course prior to such education according to its national legislation” (Mayer, Yamamura, Schneider, & Müller, 2012). For comparison, foreign students are those students who are registered at a higher education institution outside the country of their nationality (Mayer, Yamamura, Schneider, & Müller, 2012). In Germany, this includes both third-country nationals and nationals of EU and European Free Trade Association (EFTA) States (Mayer, Yamamura, Schneider, & Müller, 2012). Figure 1 demonstrates the relationship between the terms “students”, “foreign students” and “international students”.

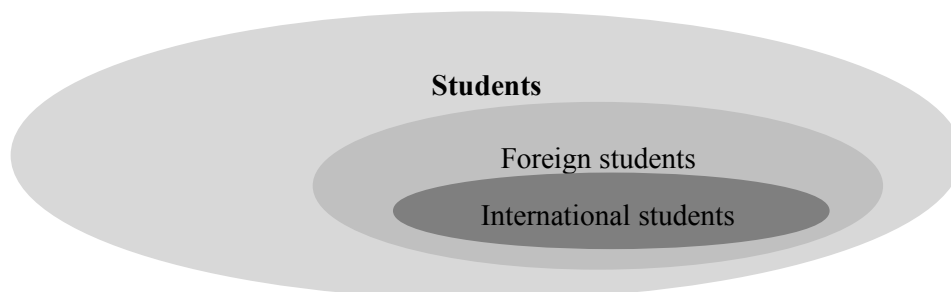


Figure 1: The relationship between students, foreign students and international students.

For international students, European higher education programmes in English are of particular interest. Table 1 shows a numerical availability of European higher education programmes in English in different years (Wächter, & Maiworm, 2014). In 2014, Germany offered 1030 higher education programmes taught in English.

Table 1: European higher education programmes in English in different years

| Year | Number of European higher education programmes in English |
|------|---|
| 2001 | 725 |
| 2007 | 2389 |
| 2014 | 8089 |

80% of all higher education programmes taught in English in Europe are predominantly offered in the second cycle (Master level) (Wächter, & Maiworm, 2014). Only 18% of master programmes taught in English in Europe are offered in the field of engineering, manufacturing and construction despite that demand in engineers is permanently growing as engineers play an important role in sustainability of knowledge-based economies. However, socio-cultural adaptation of international students within engineering Master programmes has been paid little attention. The **purpose of the work** is to analyse theoretically and empirically socio-cultural adaptation of international students underpinning elaboration of a new research question.

THEORETICAL ANALYSIS

The present part of the research paper explains the key terms “adaptation”, “social adaptation” and “socio-cultural adaptation”.

Adaptation refers to the process of adjustment to the existing conditions in the environment (Castro, 2003). In this paper, the two terms, “adaptation” and “adjustment”, are used interchangeably.

In the 1960s and 70s, research conceptualizing international students’ adaptation in the U.S. mostly focused on academic performance (Halamandaris & Power, 1999). During that period, the goal of research was to better understand the factors contributing to international students’ academic success, with the expectation that academic success was related to positive adaptation outcomes. In later years, research suggested that a more comprehensive definition of adaptation was necessary. Definition of adaptation has shifted to psychosocial aspects of adaptation, such as satisfaction with social and academic life, lack of loneliness, psychological well-being, and depression (Halamandaris & Power, 1999). Table 2 demonstrates the focus of adaptation in higher education in different historical periods.

Table 2: Focus of adaptation in higher education in different historical periods

| Year | Focus of adaptation in education |
|-----------|----------------------------------|
| 1960s-70s | Academic adaptation |
| 1990s | Social adaptation |
| 2000 | Psychosocial adaptation |
| 2010 | Socio-cultural adaptation |

Many researchers consider socio-cultural adaptation as part of social adaptation (Pavlushkina, Schepkina, Dvoryankina, Kazinets, Ledovskikh, Tabachuk, Shulika, Ashrafullina, 2016) as demonstrated in Figure 2.

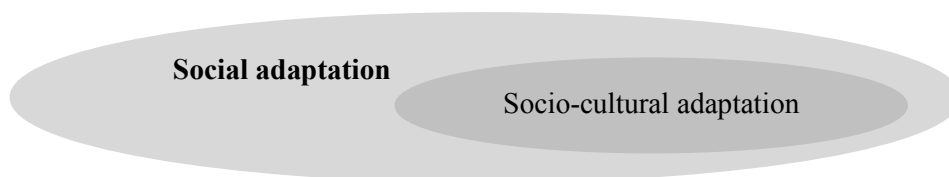


Figure 2: The relationship between social adaptation and socio-cultural adaptation.

Sociocultural adaptation refers to the ability to "fit in" the new cultural environment and to negotiate interactions with members of the new culture effectively (Sumer, 2009). It incorporates communication and social interaction skills, and it is characterized by the development of adequate social and cultural skills to handle daily social situations and demands of the mainstream cultural context (Sumer, 2009). Socio-cultural adaptation issues are identified as culture shock, culture fatigue, perceived discrimination, new social/cultural customs, norms, regulations, and roles (Sumer, 2009). Sociocultural adaptation involves an understanding of the new culture's norms and values (Sumer, 2009). Masgoret & Ward (2006) note that sociocultural adaptation does not necessitate international students to accept a new set of norm and values of the new culture, but it requires them to be aware of value differences and be prepared to effectively deal with them. Sociocultural adaptation best understood from a culture learning framework (Ward, 2001). Most common measures of sociocultural adaptation have examined the level of difficulty experienced in performing daily tasks such as understanding the local language, making friends, participating in social activities, or managing school or work-related issues (Ward & Rana-Deuba, 1999).

The socio-cultural aspect of international students' social adaptation is externally influenced by the multinational host culture, values, views, moral and ethical mentality of host society, the socio-cultural environment of the city, the environment of the university (Lipaev and Alekseeva, 2011; Lipaev, Lipaev, Alekseeva, 2010; Alekseeva, Shaidullina, Lipaev, Sadykova, 2015). The socio-cultural aspect of international students' social adaptation is internally influenced by biographical, national, cultural and religious features, linguistic competence, willingness to learn, motivation in training, communication skills, values, personality orientation, etc. (Pavlushkina, Schepkina, Dvoryankina, Kazinets, Ledovskikh, Tabachuk, Shulika, Ashrafullina, 2016). The internal aspects that potentially affect socio-cultural adjustment are grouped into three factors: ethnic identity, self-efficacy, and uncertainty avoidance (Zhao, 2010).

EMPIRICAL STUDY

The present part of the contribution demonstrates the design of the empirical study, results of the empirical study and findings of the study.

Design of the Case Study

The design of the empirical study comprises the purpose and question, sample and methodology of the present empirical study.

The guiding research question is as follows: What are culture norms and values of international students and educators of Master programme "Information and Electrical Engineering" at Hochschule Wismar? The purpose of the empirical study is to compare culture norms and values of international students and educators of Master programme "Information and Electrical Engineering" at Hochschule Wismar, Germany.

The empirical study was carried out in 2016-2018. It should be noted that the Master programme "Information and Electrical Engineering" at Hochschule Wismar involves the students from India only. However, the Master programme "Information and Electrical Engineering" is open for all the interested international students.

The case study research has been applied as "case studies [...] are generalizable to theoretical propositions and not to populations or universes in doing a case study, your goal will be to generalize theories (analytical generalization) and not to enumerate frequencies (statistical generalization)" (Yin, 2003, p.10). Case study research is a qualitative research design (Kohlbacher, 2005). The exploratory type of the case study research has been applied (Zainal, 2007) in the present empirical study as case studies have an important function in generating new research questions, hypotheses and building theory (Kohlbacher, 2005). Exploratory case studies set to

explore any phenomenon in the data which serves as a point of interest to the researcher (Zainal, 2007).

The interpretive paradigm was used in the empirical study. The interpretive paradigm aims to understand other cultures, from the inside, and establishment of ethically sound relationships (Taylor & Medina, 2013). Interpretative paradigm is characterized by the researcher’s practical interest in the research question (Cohen, Manion & Morrison, 2003). The researcher is the interpreter.

The sample of the present empirical study was composed of two educators who deliver the Master programme “Information and Electrical Engineering” at Hochschule Wismar to international students. The respondents were involved in the establishment, preparation and implementation of the Master programme “Information and Electrical Engineering” at Hochschule Wismar for international students from the very beginning. Only two respondents as a case for the study participated in the empirical study as a qualitative research design has been employed (Kohlbacher, 2005). The qualitatively oriented empirical study allows the construction of only few cases (Mayring, 2004). Moreover, the cases themselves are not of interest, only the conclusions and transfers we can draw from these respondents (Flyvbjerg, 2006). Selecting the cases for the case study comprises use of information-oriented sampling, as opposed to random sampling (Flyvbjerg, 2006). This is because an average case is often not the richest in information. In addition, it is often more important to clarify the deeper causes behind a given problem and its consequences than to describe the symptoms of the problem and how frequently they occur (Flyvbjerg, 2006). Random samples emphasizing representativeness will seldom be able to produce this kind of insight; it is more appropriate to select some few cases chosen for their validity (Flyvbjerg, 2006).

Observation served as the method of data collection. The collected data were processed via structuring and summarizing content analysis as well as comparative analysis.

Results of the Case Study

Table 3 structures the results of observation carried out within Master programme “Information and Electrical Engineering” at Hochschule Wismar in 2016-2018.

Table 3: Culture norms and values of international students and their educators

| Dimensions of culture norms and values | International students’ culture norms and values | Educators’ culture norms and values |
|---|---|--|
| Person’s name | Surname and first name | First name and surname |
| Time | Stretchable time | Punctuality |
| People address | "Sir" or "Ma'am," "Mr." "Ms." "Mrs." | Person’s title and surname |
| Politeness | Smile and nod of the head | “Please” and “Thank you” |

Findings of the Case Study

Summarizing content analysis (Mayring, 2004) allows identifying such dimensions of international students’ and educators’ culture norms and values as person’s name, time, addressing people and politeness.

Comparative analysis of the data demonstrates that culture norms and values (person’s name, time, addressing people and politeness) of international students and educators of Master programme “Information and Electrical Engineering” at Hochschule Wismar differ.

CONCLUSIONS

The theoretical findings allow outlining the relationship between social adaptation and socio-cultural adaptation: social adaptation includes socio-cultural adaptation.

The findings of the empirical study allow concluding that the culture norms and values of international students and educators of Master programme “Information and Electrical Engineering” at Hochschule Wismar differ.

The following research question has been formulated: What are criteria of socio-cultural adaptation of international students?

The present research has limitations. The inter-connections between *adaptation*, *social adaptation* and *socio-cultural adaptation* have been set. Another limitation is the empirical study conducted by involving only respondents of one master programme.

Further research tends to analyse criteria of socio-cultural adaptation of international students. The search for relevant methods, tools and techniques for evaluation of socio-cultural adaptation of international students is proposed. Further research tends to implement empirical studies in other respondents' groups. A comparative research and studies of other countries could be carried out.

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Consumption expenditures as a measure of the standard of living

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ABSTRACT

The main, theoretical aim of the present study is the demonstration of basic consumption indicators used in the research on standard of living of population. The additional aim is to present the exemplary use of food index in the evaluation of European Union's standard of living between 2000 and 2016. The basis of the research is the secondary sources of information.

The use of consumption indicators in the research concerning the standard of living enables recognition of the pace and direction of income dispersion of population's available income for satisfying miscellaneous groups of needs. The expenditures, as a derivative of income, their level, structure and changes in time provide relatively accurate image of the degree of satisfaction from particular needs which in turn provide more complete image of standard of living. One of the oldest consumption measures, used to evaluate the standard of living of whole societies and particular households, is food index. Its thorough analysis enables the comparisons made in time and space. The analysis of food index (on the basis of Eurostat data) indicated that the European Union standard of living is significantly spatially diverse. Great Britain, Ireland and Luxembourg were classified as the countries with the highest standard of living in 2016 – measured according to food index, while Baltic countries along with Bulgaria and Romania were characterized by the lowest standard of living.

Keywords: *consumption expenditure, consumption indicator, standard of living*

INTRODUCTION

The methodology of measurement of standard of living includes the collection of instruments used to measure the level of needs satisfaction of population in total, of socio-economic groups or of particular households. As a result of those measurements, the specific numbers are obtained, which can take on the form of measures or indicators of standard of living. Those numbers express the changes in the level of subjects' needs satisfaction as regards the standard of living. It's done in various cross sections, including temporal and spatial cross sections. They enable the evaluation of, among others, the effectiveness of conducted socio-economic policy of the country and the ability of subjects to adjust to new conditions on the market (Grzego, 2012, p. 61).

The research on the population's standard of living is of interdisciplinary character. It combines the efforts of not only the economists or sociologists but also statisticians, psychologists, political scientists and practitioners from various life fields. Particular methodological solutions are characterized by wealth and diversity, which makes impossible to present accurately and exhaustively all of the approaches, proposed methodical solutions and specified measures used in the research on the standard of living. In the present study, the consumption measures will be taken into consideration – they constitute one of the groups of measures describing mostly the material dimension of life of consumption subjects.

The main, theoretical aim of the present study is the demonstration of basic consumption indicators used in the research on standard of living of population. The additional aim is to present the exemplary use of food index in the evaluation of European Union's standard of living between 2000 and 2016. The basis of the research is the secondary sources of information.

THE STANDARD OF LIVING AND ITS MEASUREMENT – GENERAL APPROACH

In the last few dozen years, there was a significant increase of interest in research on standard of living. Among causes of interest increase in the research concerning the conditions, standard and the quality of living we may find so called “new” targets of societies development, as well as globalization and internationalization processes, benchmarking popularity, new models of management, tendency to fact based policy and climate changes (Berger-Schmitt, Jankowitsch, 1999, pp.9-11).

The standard of living is not a category which can be observed directly. There is a particularly high quantity and variety of terminological solutions, as well as methodological ones, which refer to research on the standard of living.

The standard of living is associated with the extent to which human needs are satisfied, which results from the consumption of material goods and services and the use of benefits from the social and natural environment (Bywalec, 2017, p.49). Starting from this definition, it has to be taken into consideration that research on standard of living of population is in fact the analysis of human needs satisfaction. The needs are the core of the notion of “standard of living”. The groups of needs discussed here are especially: food, housing, health care, education, culture and recreation, financial security and social security (Luszniewicz, 1982 p. 12). The degree of experiencing and satisfaction out of above mentioned and other needs influences the diversity of standard of living in particular consumption entities.

The basic entities of research on standard of living are as follows:

- the population of country in total or other territorial communities,
- the households.

In case, the research on the degree of needs satisfaction is conducted with the use of subjective assessments, the individual consumer may also be the entity of research (Janoś-Kresło, Mróz, 2006, pp.108-109). Depending on the research subject we can relate to research on the standard of living conducted in macro- and microeconomic scales (Grzega, 2015).

The measures of standard of living of population (residents of households) are presented as numerical assessment of the degree of basic needs satisfaction. The measures perform direct function informing clearly what they relate to. In the research on the standard of living, various types of indicators are used. As opposed to measures, they perform an indirect function, they connect the researched problem with a wider background. They enable the estimation of population’s living conditions and the monitoring of trends in various areas of social life (McEwin, 1995). Many authors use those notions interchangeably as well as the author of the present study.

In general, three main aspects of research on standard of living can be distinguished. They are employed into the research on the socio-economic development of societies (Sirgy, Michalos, Ferriss, Easterlin, Patrick, Pavot, 2006; Johansson, 2002):

- economic,
- social,
- subjective.

In the first approach, the relation between the benefits and expenditures is taken into consideration most frequently (Dasgupta, 2001). The great importance is attached to the income and expenditures, because they enable the measurement of the researched phenomenon in the numerical category. They bring loads of consumption goods and services to a common denominator, meaning money. The advantage of this approach is relatively easy access to the data, which can be obtained from many sources and the number of those sources is limited which in turn greatly facilitates the analysis (Chan Yin Fah, 2010; Meyer, Sullivan, 2003). However, it is worth mentioning, that the income is not the target by itself. It should rather be treated as the mean to reach the target, namely the suitable standard of living (Grasso, Canova, 2008). This approach does not take into consideration many aspects of standard of living, e.g.: environmental conditions, health care, education, safety and civil liberties.

The second approach – social – is a measurement of objective character and simultaneously it relates to those life dimensions of consumption subjects which can be researched with the use of economic indicators. The indicators belonging to this group are frequently used for research and for estimation of standard of living of population. They enable the estimation of social development and its changes in time (OECD, 2009, p.52). They reflect the living conditions of residents and they are used to identify various social problems (Noll, 2004, pp.185-212). It is significant, so that they are sensitive to a particular phenomenon, available in time range, comprehensible and easy to interpret. They also should relate to economic and subjective indicators (McEwin, 1995). In the broadest sense, the social indicators are treated as the tools of regular observations and analyses of social changes. Apart from the information support for the socio-economic country policy development, one of the tasks belonging to social indicators is the control over the efficiency of political programs (Michalos, 2003, pp.239-274).

The third approach in the research on standard of living is based on subjective indicators and it refers to the individual consumer experiences as regards the satisfaction from life. The experiences of individual consumers are expressed as subjective opinions. The subjective indicators provide reliable information about various aspects of standard and quality of living (Veenhoven, 1996) and they pertain to the subject matter on equal degree as economic and social indicators (Noll, 2004, pp.151-181). However, they reveal some disadvantages connected with the great extent of dependence on the respondents characteristics, the level of their ambitions and the way the perceive chosen issues.

The standard of living of population may be measured with the use of various measures, which – broadly speaking – may have the nature of objective and subjective measures. Among the objective measures, there can be distinguished the value-related (expressed in monetary units) and quantity-related measures (expressed in natural units). In case of value-related measures, the measure of expenditures (costs), borne by population (e.g.: income spent) and by government (e.g.: the expenditures on the collective consumption fund) to achieve certain standard of living, is obtained. In case of qualitative measures, the measure of effects (benefits) is obtained in the form of actual lower and higher order needs satisfaction. The value-related measures, enable the answer to the question of how much the achieved standard of living costs, and the qualitative measures enable calculation of the degree of particular needs satisfaction. The quantitative and value-related measures are not mutually exclusive, they are quite the reverse- they should be used complementary (Grzegza, 2012, p.81).

THE CONSUMPTION INDICATORS IN THE RESEARCH ON STANDARD OF LIVING

The research with the use of consumption indicators may be conducted on the basis of various source data. It can be macroeconomic data obtained from the national account systems, the data obtained from the research on household budgets or the data gathered in the direct research (by means of survey).

One of the basic consumption indicators which describes the standard of living of population in a given country is the global consumption indicator. It is an indicator of value-related nature, where the value of consumption of food-related and non-food-related goods and services is expressed in one currency e.g.: Euro. It is important to know that the essence of the discussed indicator depends on the accepted price system and the range of consumption. This indicator may include the value of goods and services financed from the available income of households and/or the value of goods and services financed from public sources, e.g.: the educational, health care and cultural services. The main disadvantage of this indicator is the difficulty of making the proper estimation of services provided free of charge and partially for a payment. This indicator does not take into account the income postponed in time, e.g.: the savings, as well as the level of stocks or durable consumption means of households. This measure shows only the mean values and it does not inform about the structure of consumed goods and services. Among the disadvantages of this indicator, there can be found not sufficient sensitivity to sudden changes of social and economic situation of the country and the postponing in time. The basic advantages of the indicator are as follows: the complex nature

(the influence of many determinants on the level consumption), the simplified calculations, the possibility to compare to international results. Considering the global approach of consumption indicator it is possible to classify the countries according to specified criteria, e.g.: according to the phases of consumption development.

In the analyses and in the evaluation of the degree of needs satisfaction, the indicators of level, dynamics and the structure of individual consumption in the nominal and real approach, in macro and micro scales, are used most frequently. As an instance, the size, pace of changes and the structure of households consumption are the main indicators enabling relatively impartial evaluation of standard of living of a population in given country in general, in the material approach at least. In Eurostat methodology, there is used an actual individual consumption indicator. It covers all of the goods and services consumed by the population, irrespective of the financing source (private or public). The part paid from the available income, realized in the framework of individual consumption is defined, in Eurostat research, as household final consumption expenditures. This category includes all of the expenditures made by the household sector. The remaining part consists of expenditures of government and non-government organizations, among others, the expenditures for health care and education (Eurostat, 2018).

The use of the indicators of individual consumption enables the recognition of pace and the directions of income dispersion of available income of households for satisfying various groups of needs. The expenditures, as a derivative of the income, their level, structure and the changes in time, present relatively actual image of the degree of needs satisfaction of consumption subjects. The thorough analysis enables the comparisons in time and space.

One of the oldest measures of consumption used to evaluate the standard of living is food index. Food index (i.e. Engel’s coefficient) is an important measure to be used while assessing the level of life in any population and households. It shows proportion of expenditure on food in total expenditure. As early as 150 years ago Engel noticed that the poorer the society was, the higher proportion of their incomes was spent on food. According to Engel’s law, an increase in incomes leads to a decrease in proportion of expenditure spent on food. Increase in the value of this index predominantly means that the level needs are satisfied deteriorates (Bywalec, 2010, p. 117). The low value of food index means that relatively small part of the income is designated for food. It proves simultaneously that the society is wealthy. Therefore, analyzing this measure in time – the decreasing share of the food expenditures in general expenditures shows that there is improvement in standard of living (Grzega, 2012, p. 170).

Another measure used to evaluate the standard of living is the expenditures free choice indicator, counted as the share of free choice expenditures in general expenditures. The expenditures free choice are the expenditures devoted to fulfilling more than basic needs of households. Those expenditures are not necessary to function normally, and the resignation from them does not result in any effects on health, life or functioning in society. However, their high and still growing values show the improving standard of living. It is worth noticing, that the division of expenditures into basic and of free choice is often of arbitrary character, because it can be modified with various subgroups of expenditures. The criterion of expenditures division for basic and of free choice is the answer to question whether the given expenditures is connected with the fulfillment of the need treated as conventionally indispensable in some socio-economic conditions. Such a division is firstly- highly subjective, which disables the possibility to compare the expenditures in particular groups, and second- impossible to conduct on the basis of public access information sources (Grzega, 2012, p. 171).

To evaluate the degree of needs satisfaction, the quantitative consumption indicators are used. They are expressed in natural units e.g.: pieces, kilos. They enable, in a relatively objective manner – because it relates to physiologists’ and other specialists’ recommendations – the estimation of the level of fulfillment of chosen needs e.g.: food, housing. The positive and consistent with standard level, quantitative and qualitative changes in the range of natural consumption indicate the improvement in the standard of living.

Summarizing this part, it can be stated that consumption is an adequate indicator of actual standard of living. The structure of consumption expenditures is the result of the extent of available income

of households and the wealth of the country measured with the level of GDP per resident (Szulce, Walkowiak-Markiewicz, 2017).

THE EXAMPLE OF FOOD INDEX USE

The food index presented in the following part expresses the percentage share of expenditures for food and non-alcoholic beverages in total expenditures in the whole household sector. It is calculated from the available income, in actual prices.

The significant information enabling the evaluation of standard of living on the basis of food index is information about the income conditions in households (according to 1st Engel’s law- the higher the level of income, the lower the share of food expenditures in total expenditures). It results from Eurostat data, that between 2000 and 2016 in the whole EU there was an increase of gross available income in household sector (Eurostat, 2018). Certainly, the situation was diverse, depending on the year of analysis and on the country, but this is not the aim of the present detailed reflections.

Analyzing the data from Table 1, it is visible that the share of food expenditures in total EU expenditures equaled 12.2%. However, there are some countries which exceed this level and conversely. It is easy to notice that countries on the south and east of Europe exceed, for the EU-28, the mean share of food expenditures and non-alcoholic beverages. The highest share of food expenditures is noted in Lithuania and Estonia (20%), the lowest in Great Britain, Ireland and Luxembourg (below 10%). In Poland, year-by-year, there is a constant decrease of share of food expenditures. However, it is still significantly higher than the mean EU values (in 2016 the difference equaled almost 5 percentage points). The high value of food index can be found as well in Romania, Bulgaria, Latvia, Slovakia, Hungary, Greece and Portugal. Among the countries, which accessed the Union after 1st May 2004, only in one case the share of food expenditures in total expenditures is almost identical as the mean EU level and it is Malta’s level. Whereas in the member states of so called “old Union”, the countries in which the share of food expenditures exceeds the mean values for the EU are as follows: Greece, Portugal, Italy, France and Belgium. The higher increase between 2000 and 2016 of the discussed value was noted in Austria, Greece and the Netherlands. In the remaining countries, where the increase was spotted as well, it does not exceed 0.7 percentage point. Much higher values of the food index, in comparison to EU mean, for “new” Union members indicate to a lower standard of living of the residents of those countries. However, in many of the countries, slow, but systematic decrease of the discussed measure took place or is still taking place, which indicates to gradual improvement in the analyzed issue. Summarizing, on the basis of analysis of food indices, we may reach the conclusion that the standard of living of European Union population is significantly spatially diverse. It presumably results from the general socio-economic development of countries. Particular countries differ as regards the possession of funds, infrastructure, social and environmental conditions, which define the possibilities and the degree of needs satisfaction. It causes that even the countries neighboring directly with each other differ significantly as regards the needs satisfaction of their residents. Countries with the highest standard of living in 2016, measured with the food index, are Great Britain, Ireland and Luxembourg, while Baltic countries and Bulgaria and Romania are the countries with the lowest standard of living of their residents.

Table 1: Food index in households sector in EU

Source: <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do> (21.02.2018)

| Specification | 2000 | 2005 | 2010 | 2016 |
|----------------------|-------------|-------------|-------------|-------------|
| EU-28 | 12.4 | 12.1 | 12.3 | 12.2 |
| Austria | 10.3 | 10.0 | 11.1 | 11.7 |
| Belgium | 12.7 | 13.2 | 12.8 | 13.4 |
| Bulgaria | 28.8 | 21.2 | 19.6 | 19.5 |
| Cyprus | 13.8 | 13.1 | 12.1 | 14.3 |
| Czech Republic | 17.4 | 14.9 | 14.1 | 16.0 |
| Denmark | 12.0 | 11.0 | 11.3 | 11.4 |
| Estonia | 20.7 | 18.9 | 20.0 | 20.3 |
| Finland | 12.6 | 12.0 | 12.1 | 12.0 |
| France | 13.2 | 12.8 | 12.9 | 13.4 |
| Germany | 11.0 | 10.8 | 10.2 | 10.6 |
| Great Britain | 8.4 | 7.9 | 8.6 | 8.1 |
| Greece | 16.1 | 16.1 | 15.8 | 17.2 |
| Hungary | 18.9 | 16.4 | 16.7 | 17.7 |
| Ireland | 11.1 | 9.3 | 9.5 | 9.1 |
| Italy | 15.2 | 14.8 | 14.5 | 14.2 |
| Latvia | 25.6 | 21.6 | 20.6 | 18.2 |
| Lithuania | 27.6 | 25.3 | 24.0 | 22.2 |
| Luxembourg | 8.9 | 8.9 | 9.2 | 9.4 |
| Malta | 14.7 | 14.0 | 13.5 | 12.3 |
| Netherlands | 10.7 | 10.3 | 11.1 | 11.7 |
| Poland | 22.7 | 21.0 | 19.1 | 17.1 |
| Portugal | 16.6 | 15.9 | 15.8 | 16.9 |
| Romania | 33.7 | 29.8 | 27.0 | - |
| Slovakia | 23.4 | 18.1 | 17.2 | 17.8 |
| Slovenia | 16.7 | 14.8 | 14.6 | 14.8 |
| Spain | 14.1 | 13.1 | 12.6 | 12.8 |
| Sweden | 12.0 | 11.9 | 12.2 | 12.3 |

Croatia - no data available

CONCLUSIONS

In the last few decades, the great advancement in the range of methodology of standard of living measurement was made. The visible improvement in the measurement accuracy was noticed and the general knowledge about various elements of population's living conditions and their determinants was broadened. The use of objective and subjective indicators, partial and synthetic, value-related and quantitative in the research on the standard of living became common for the researches. However, despite the fact of appearance and development of new measurement tools, e.g.: anthropometric measures, power consumption measures or other measures of alternative nature, the well-known, used for many years and verified tools are used constantly. The consumption indicators are included into the well-known group and despite of their disadvantages and the skepticism accompanying the official statistics, they are still applicable in the evaluations of need satisfaction. As it was mentioned before, their fundamental advantage is impartiality. Not without significance is the long research tradition, standardized methodology and the continuity of realization, which

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enable the research conduction in long term periods and great spatial ranges. The simplicity and the firmness of calculations appeal to their use. Those are the measures relatively easy to use and comprehensible. However, it is worth noting that they describe mainly the material dimension of functioning of consumption entities, which does not present the whole image of the researched issue. While researching the standard of living with their use, the evaluation needs to be completed by other non-economic measures of objective-social and subjective nature.

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Economic culture in social economy entities. Problems and challenges

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ABSTRACT

The article suggests that not only legal, institutional and economical environment but also development of economic culture of entities and respective groups of employees in this sector would be decisive factors for Polish social economy. Due to versatile nature of social economy entities in Poland and clear orientation towards the reformist model and having the American model as the source of inspiration, it was established that creation of their economic culture is possible by using educational instruments. It means that social economy entities face serious challenges regarding development of economic culture of their participants, and that individualisation of educational elements is the optimal direction.

The content of the article falls within the frames of economic and social analyses. It makes use of sociological and economic studies and is based on existing sources and own research. Descriptive analysis was used to present the researched topic.

Keywords: *social economy; economic culture*

INTRODUCTION

The main aim of this dissertation is to indicate that the Polish model of social economy is becoming increasingly more inspired by its American rather than its European counterpart. Therefore, the growing interest in social enterprises (as opposed to other organizational types) encourages some actions to be revised. It is claimed that in order for social economy in Poland to develop, it is essential not only to reflect on their legal and institutional issues, but other elements are also becoming important.

The following study assumes that an essential condition for the development and duration of social economy entities in Poland is the emphasis on creating the economic culture of individual social groups. In view of the fact that we are dealing with a diversified human capital operating within these entities, various instruments should be applied to them. Undoubtedly, the most effective instrument is education, which, depending on the group of employees, would best meet their educational needs and could eliminate deficiencies in the field of economic culture.

1. Polish model of social economy

Development of social economy in Poland, though dynamic, meets many obstacles which cause significant instability characterised also by a relatively short period of activity. In the literature we can mostly find descriptions of the American activity model of social economy entities (created mostly by private entrepreneurs), present in the market and fulfilling both economic and social purposes, and the European model where social mission is of key importance.

We also deal with alternative approaches of social economy conceptualisation characterised by J. Smith and A. McKittrick who distinguished the *reformist*, *inclusive/broad-based* and *civil society* approaches (Smith, McKittrick, 2010, p. 26). When referring to these concepts, we can point out that they have their reflections in the Polish context. K. Nagiel, when referring to the abovementioned approach, characterised Polish social economy entities (set in order by the author of article in Tab 1.) by arguing that in Polish economy a reformist economy concept is developed (Nagiel, 2015).

Table 1: Alternative conceptualisations of social economy

Source: own elaboration based on: (Nagiel, 2015)

| Model Type | Theoretical basis | Characteristics | Entities |
|-----------------------------------|--------------------------|---|--|
| Reformist | endogenous development | <ul style="list-style-type: none"> • actions at local level • (people-centered and place-based) • bottom-up initiative and self-organisation • dominance of economic function over the social function | social enterprises |
| inclusive/ broad-based | social capital theory | <ul style="list-style-type: none"> • it aims at improving the quality of life of individuals • reduction of social exclusion • active combat against poverty • execution of both economic and social objectives | Vocational Development Centres; Occupational Therapy Workshops; Social Integration Centres |
| civil society | concept of civil society | <ul style="list-style-type: none"> • empowerment of individuals and communities • active citizenship • alternative for neoliberal and neoconservative policies • redefining the relations between economy, state, market and social economy | entities operating in the area of public benefit |

When taking the above view one should especially note that weakness of civil society in Poland leads to insufficient realisation of the *civil society* concept especially in the area of redefining relations between economy, state, market and social economy while the *inclusive/broad-based* concept requires public support, what often seriously impedes functioning of these entities.

Development of Polish social economy depends on many factors but, in line with the declared goal, the study is focused on a single aspect of the problem, that is the necessity to develop economic mentality of participants (and beneficiaries at the same time) of social economy entities, skills of creators of these entities and competence of the management. It means that social economy entities

require the process of developing economic culture which can determine their success or failure. Economic culture, defined as the way of thinking and acting of individuals and communities in the field of economy, should be viewed as a development factor. For it is agreed in modern economy that human and social capital is crucial for a given society’s growth potential. Economic culture can define the potential of a given social group to participate in economic processes, and ultimately, to win a good social and economic position (Krzyminiewska, 2013).

2. The importance of developing economic culture in social economy entities

2.1. Essence of economic culture

Economic culture is an informal institution which can influence other – formal institutions. The concepts refers to the category of phenomena related to economy, certain values, cognitive patterns and best practices, as well as to the notion how economic life should be organised. The simplest definitions describe economic culture as these beliefs, attitudes and values which are related to economic activity of individuals, organisations or other institutions. Within the concept of economic culture there are worldviews and best practices which can be of key importance to individuals and communities to make their way in given economic systems (Porter, 2003, pp 14-28).

Cultural economy is defined by an integrated system of factors which determine behaviours of individuals within economy. When defining cultural economy, it can be assumed that this concept is understood as a number of factors which set the way of thinking and acting of individuals and social groups within economy (Figure 1). These factors include economic socialisation, economic knowledge possessed by an individual and community, skills indispensable for an individual to operate in (market) economy, attitude to money and to saving, attitude to work and entrepreneurship, evaluation of and attitude towards social reality, level of material aspirations, consumption, system of values related to an individual or whole communities (Krzyminiewska, 2010).

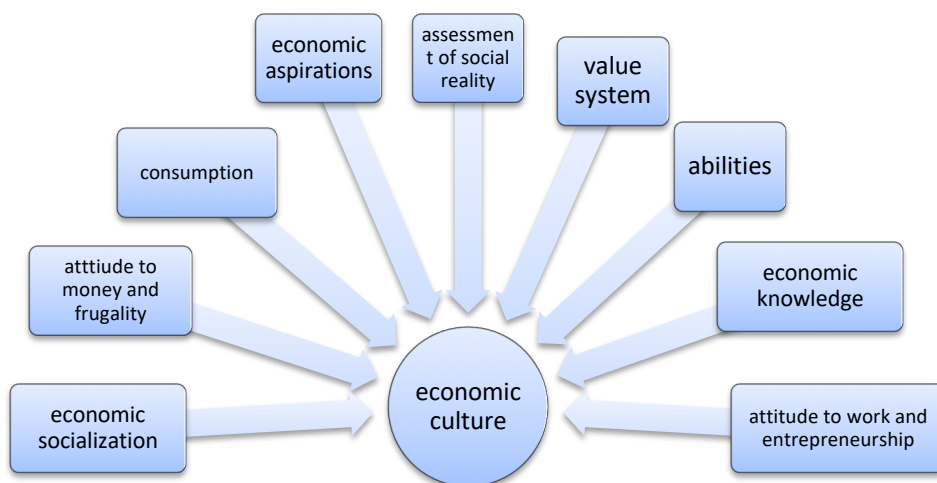


Figure 1: Elements of economic culture
Source: (Krzyminiewska, 2010).

When taking a closer look at these components, we may state that:

- in entities focused on disadvantaged groups and excluded persons we can notice deficits in the quality of economic socialisation, value system, work ethics or entrepreneurship of these persons and groups;
- there may be deficiencies of knowledge in the field of economics and of skills (competencies) in entity and personnel management.

Therefore, proper instruments are required which will enable effective development of economic culture in social economy entities.

2.2. Developing economic culture in social economy entities

The consequence of taking such assumption is the question how it is possible to develop economic culture of those participating in social economy entities. There are no doubts that there is a need of broadly understood education, as it is education which gives the best results in supporting the expected changes in economic culture. Educational processes can support elements which form economic culture where there is lack of other factors for shaping pro-development values, and the dominant role of education results from the fact that social economy functions in substantial variability of environment, and there is a need of shaping *learning society* attitudes as well as continuous education of employees during the period of their working life (*long-life learning*).

Economic education is the basic tool for developing economic culture, especially if transmission of cultural values is disturbed because of insufficient examples of entrepreneurship (Table 2 indicates the most important elements of the education process).

Table 2: Economic culture in the education process

Source: own elaboration

| Economic culture | Education process |
|--|--|
| Economic socialisation | Secondary socialisation: developing knowledge and skills in the field of management and organisation, shaping examples of diligence and punctuality, forming habits of respecting personal and public property |
| Economic aspirations and the value system | Examples of success and motivation in implementation of plans |
| Economic knowledge | Provision of basic knowledge: economic terms, management rules, data collection, understanding and interpretation |
| Social skills | Developing skills of cooperation, conflict resolution, interpersonal communication, and compliance with rules and action planning |
| Consumption | Building of bases for reflective consumption |
| Work attitude | Shaping of work ethics |
| Entrepreneurship | Shaping of knowledge and attitudes, support for self-assessment |
| Evaluation and attitude towards social environment | Competency building, reliable sources of information |

It will not be possible to adapt a universal method for social economy entities. Since – most of all – development of economic culture is related to the necessity of considering social and economical context where these entities function and to customize education instruments for individual groups which participate in social economy activities. Among social economy employees there are four groups which should be covered by different educational techniques. These are: employees from disadvantaged groups, employees outside the disadvantaged group, management and leaders/founders of a given entity.

A characteristic feature of employees from disadvantaged groups is lack of expertise and skills which would allow them to make their way in an open and competitive labour market. Persons from these groups often have negative life experiences, and also long-lasting absence from the labour market. In such case, all educational instruments should focus on learning a profession with the use of one’s qualifications. Shaping of their economic culture should be made through conscious control of secondary socialisation, part of which would in this case consist in implementation of work ethic, skills related to entering into interactions with other people, ability of social communication and readiness to cooperate with others. It also involves shaping of attitudes where an individual gains the ability to react on difficulties and adopt specific behaviours. Readiness to comply with agreements, shaping of reliable attitude, trust and work discipline gain more importance.

Influence of the entire organisation is a significant mechanism, but mentoring seems to be of utmost importance and effectiveness. Mentoring in social economy entities can take a form of the so called social mentoring which, according to its general definition, means help to those who, for any reasons, have been excluded from the world of work and getting qualifications or have never participated in that world (Parloe, Wray, 2008, p 105). Thus in this case, a social mentor concentrates not only on issues related to teaching occupational activities but also supports the person under care in redefining his/her life, thus creating an environment which stimulates self-discipline, commitment and developing that person’s professional and social competencies.

Employees outside disadvantaged groups are characterised by strong diversity. First of all – in Poland this group includes persons who belong to the so called creative class (Florida, 2012) and who, for example, combine the art they create with integration activities of local communities, and they achieve this through establishing social economy entities. When concerning this group, we are dealing with lack of economic expertise (in most cases they have artistic education) which is necessary to run such entity. Propagation of such knowledge is important because often these people understand economy as a special, exclusive and hard-to-understand knowledge, thus resulting in great caution in actions they take. In Poland educational activities through postgraduate education, courses and training activities carried out under programmes to support social economy (often funded by EU programmes) bring positive results, but it is crucial to ensure that these actions have continuous character and are permanently included in the education system. Second of all – the group of social economy employees includes also persons who decided on a given work because they are socially sensitive and derive satisfaction from work in such entities–and/or–treat it a form of professional experience. Therefore, it is fully justified to equip them with knowledge resulting from the specific operation and managing of social economy and basics of psychology and social psychology.

Executive personnel is a separate category. Experiences of Polish social economy indicate that due to relatively lower salaries in this sector, there is insufficient number of applicants with professional expertise and practice in the field of management. Support covering professional expertise, entrepreneurship and economic aspirations may be crucial for passionate people who are ready to take new challenges. Developing economic culture within this scope is possible, for example, through a

system of cooperation between universities providing education in the field of economy and management as well as through introduction of system of apprenticeship in social economy entities offered to students close to graduation. In such case, professional expertise on management would be used in practice by new executive personnel entering the market.

Social economy founders/leaders are the last category. Knowledge and skills of founders can be decisive for functioning of entities in local environments because development of social economy requires number of professional and social competencies owned by persons founding and developing social economy entities. It also requires improving their social awareness in order to actively influence, as an entity, social environment. It should be achieved by first and second degree higher education studies which in specific programme modules should include content related to social economy and also continuous education programmes. The point is to, apart from commitment and passion which are characteristic for those active in this field, equip them with professional economic expertise. It is the more important as often in social economy entities employ persons without degree in economics, and this may cause difficulties in everyday activities. Therefore, knowledge of economic theory, public finances, financial management, organisation management, HR management, and also marketing of social initiatives or various legal aspects, gives an opportunity to acquire crucial competencies.

Table 3 summarises educational needs of individual occupational groups while, at the same time, indicating how they can influence their economic culture.

Table 3: Occupational groups and economic culture in social economy

Source: own elaboration

| Challenges for developing economic culture | | | |
|---|--|---|---|
| Occupational groups | Educational needs | Relevance for economic culture | Educational instruments |
| Employees from disadvantaged groups | <ul style="list-style-type: none"> • work culture • developing social skills • vocational education | <ul style="list-style-type: none"> • ethic competence • readiness to take new social roles • examples for professional success • building institutional trust | <ul style="list-style-type: none"> • vocational training • social mentoring |
| Employees outside disadvantaged group | <ul style="list-style-type: none"> • economic knowledge • social and technological innovations • interpersonal communication and negotiation skills | <ul style="list-style-type: none"> • cooperation skills • entrepreneurship • economic and social activation | Postgraduate education |
| Executive personnel | <ul style="list-style-type: none"> • professional and economic knowledge • entrepreneurship • psychological knowledge • interpersonal communication and negotiation skills | <ul style="list-style-type: none"> • economic knowledge, • professional knowledge • principles and rules in economy • ethic competence regarding CSR | <ul style="list-style-type: none"> • bachelor and master degree studies with social economy entity management programme • internships and work placements |

| | | | |
|-------------------------|---|--|----------|
| Entity leaders/founders | <ul style="list-style-type: none"> • economic knowledge • knowledge on a certain aspect of social economy • interpersonal communication and negotiation skills | <ul style="list-style-type: none"> • entrepreneurship • economic knowledge, • innovation • drive to achieve • ability to make use of social support | as above |
|-------------------------|---|--|----------|

There is no doubt that each of the groups of employees listed in Table 3, performing different roles in given entities, requires a different education. It is worth paying attention to the first group, in which mentoring is particularly important, as it can effectively support the professional and personal development of people with low human capital, and thus effectively contributes to their stabilization in the world of labour. It is also worth emphasizing the importance of education towards the second and fourth group of employees, whose passion in this area must be supported by professional economic knowledge. This is all the more important, as people working for social economy entities often do not have a prior educational background in economics, and it can be an obstacle for them when performing everyday work activities. Therefore, postgraduate studies which cover theory of economics, public finances, financial management, organization management, human resources management, but also marketing of social enterprises, or various aspects of law, become an opportunity to acquire important skills for the effective operation of the entities of social economy.

CONCLUSIONS

The educational process related to building a culture of entrepreneurship, economic knowledge, social skills, and other components of economic culture presented above, becomes essential for social economy entities, due to the widespread application of economic criteria to almost all areas of social life. Considering the predominance of the reformist model in the Polish social economy, shaping the economic culture of individual employee groups may determine their success. Reduction of deficits in economic culture through education, which in this case are appropriate for individual categories involved in social economy, is a necessary condition for accelerating its development. Developing economic culture based on transfer of good practices, social skills, social responsibility, entrepreneurial and innovative attitude, readiness to defer benefits in order to achieve long-term objectives is not idealising, but it is on all accounts pragmatic and possible to achieve through targeting of training instruments.

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Implementation of the concept of sustainable development in Poland in the context of Goal 4 of the 2030 Agenda

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ABSTRACT

This article aims to identify and evaluate Polish achievements in implementing sustainable development in the context of Goal 4 of the 2030 Agenda. The current set of synthetic substantive indicators, established by the UNO, were used to measure the progress of this implementation. The research period covers the period 2010–2016. The authors analyzed legal acts, institutional reports, statistical data, dynamics and ratio analysis, as well as a ‘plus’ evaluation scale reflecting the achievements. This allowed for establishing the level of achievement of completion of tasks assigned to Goal 4 and highlighted those that require intensification of actions.

Keywords: *sustainable development, goals of the 2030 Agenda, Polish achievements*

INTRODUCTION

The Millennium Development Goals established by the UNO in 2000 have not been fully achieved (*The Millennium Development Goals Report 2015*, Sachs 2005, Sachs 2008, Stiglitz 2007, Czaja 2016). In 2015, they were replaced with Sustainable Development Goals characterized by a significantly wider horizon of planned activities and perspectives by 2030. The 2030 Agenda, a global program for sustainable development, constitutes one of the most interesting global initiatives of the second half of the XXI. The goals and tasks adopted in the Agenda, aimed at continuation of leveling the most vital social, economic and environmental global issues, is a significant, if not a momentous event.

The research presented in this article concerns Goal 4 of the 2030 Agenda. To monitor Goal 4, a set of 12 substantial indicators was used to compare achievements in the relevant scope for particular countries, between the countries and globally. The results of the measurements should constitute a basis for recommendations regarding any further actions necessary for achieving the intended goals and overcoming potential problems.

The aim of this article, as determined by the research, is to identify and evaluate Polish achievements in implementing sustainable development in the context of Goal 4. As a Member State of the European Union (EU), which is a signatory of the New Agenda, Poland began to implement activities in the scope of education and formation after its association into the EU (Kryk 2016, Kryk 2017). Due to the relative novelty of the Agenda, this article constitutes an attempt to fill a research gap, while the adopted evaluation method extends the spectrum of research methods. In order to present Polish achievements in the discussed scope, the substance of the 2030 Agenda is presented in brief, as well as the tasks within Goal of the Agenda. Substantial indicators (from available public statistical data) were analyzed for the period 2010–2016. This allowed for formulating conclusions on the current achievements of Poland in the researched area.

SUBSTANCE OF THE 2030 AGENDA

The UNO resolution *We transform our world: Agenda for sustainable development 2030* (2015) was adopted by the General Assembly on 25 September 2015. It establishes a universal, global framework of actions for eliminating of poverty and achieving sustainable development by 2030. The Agenda includes a set of 17 ambitious goals, and 169 associated and mutually complementary tasks. These goals and tasks in the scope of sustainable development are designed to eliminate poverty and famine in all its forms and dimension; fight inequalities inside and between countries; protect the planet; create an environment for stable and sustainable economic development that favors social inclusion, common wealth and decent jobs for all; and support social integration, taking into account various levels of wealth and national potential. The goals and tasks cover the entire world, were adopted by all the countries and ensure balance between three aspects of sustainable development: economic, social, and environmental. Their implementation should be monitored with a number of indicators, which is a new aspect as compared to the limited evaluation tools in the Millennium Goals.

The instruments pertaining to the 2030 Agenda were adopted in the *Addis Abeba Action Agenda*, listing tools and means (resources), from the budgets of particular countries as well as from private and co-funding sources, dedicated to supporting development of poorer countries (*official development assistance*, ODA) (Resolution 2015)¹. The 2030 Agenda sets out sustainable and environment-friendly systems of social, economic and environmental management, independent of socio-political and economic regimes. In theory, such complexity of the 2030 Agenda should allow for more sustainable production and consumption, which conditions better balance in the management of natural resources and efficient impact on climate change (Gruchelski, Niemczyk 2016). Sustainable development in the conditions of economy based on knowledge is not possible without education, which in modern times should consist of lifewide lifelong learning (LLL). Therefore, the 2030 Agenda highlights the importance of achieving Goal 4 (inclusive and high-quality education for all and promoting LLL), the implementation of which is the condition for many other goals.

Goal 4 consists of the following tasks:

- 4.1. By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.
- 4.2. By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.
- 4.3. By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.
- 4.4. By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- 4.5. By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.
- 4.6. By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.
- 4.7. By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.
- 4.a. Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

¹ In order to implement the 2030 Agenda it is necessary to, as estimated, increase the ODA means value, also by increasing contributions from highly developed and relatively highly developed countries (including Poland) to the level of 0.7% of GDP.

4.b. By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries.

4.c. By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries.

Poland is one of the countries obliged to implement the above-mentioned tasks, and some achievements have already been made in that scope, therefore it is worth evaluating them in the context of implementation of Goal 4 of the New Agenda.

POLISH ACHIEVEMENTS IN THE CONTEXT OF IMPLEMENTATION OF GOAL 4

Monitoring progress of the implementation of the goals and tasks of the 2030 Agenda was based on 232 indicators, of which 12 are associated with Goal 4. For the majority of those indicators there were no reference levels adopted and it was only assumed that their level should improve. In order to identify the state of Polish achievements in this scope, the volume, dynamics and direction of changes in indicators were all analyzed. Next—given the rate of changes in this scope—a synthetic evaluation was carried out of previous achievement in the implementation of tasks under Goal 4. For the purposes of this analysis, the following grading scale was used: unsatisfactory (+), moderately satisfactory (++) , quite satisfactory (+++), satisfactory (++++). The higher the level of achieved indicators and the faster the rate of changes, the more (+) were assigned. For the purposes of ensuring transparency of the discourse, the tasks and their corresponding indicators are presented in Tables 1–4.

The analysis of data from Table 1 shows that Poland reached relatively high levels for indicators 4.1.1 and 4.2.2. The average value of indicator 4.1.1 in 2015 increased by over 85%, which means that the majority of young people has achieved a minimum proficiency level in reading and mathematics. The indicator for proficiency in mathematics² (both general and detailed) and the general indicator for proficiency in reading increased on the average by 4.7% in comparison to data from 2010 (approx. 2.6 pp), while greater change occurred in mathematical skills than in reading. Meanwhile, indicators for reading proficiency for young people decreased (on average by 3.5%), which may be caused by various factors, including didactic, sociological, and technological factors. Their overlap results in the occurrence of an adverse synergistic effect, e.g. too much time devoted to the Internet and social media by young people from so-called generation Z, as the simplified means of communication used in those media forms does not favor development of reading and verbal self-expression. Despite this, the level of achievement measured with indicator 4.1.1 is still quite satisfactory.

The average value of indicator 4.2.2 in 2016 amounted to 95.86%. Within 6 years, the indicator increased only by 0.5%, but this still means that almost all children—in accordance with the requirements—participated in organized learning 1 year before the official primary school entry. Inconsiderable differences in the level and dynamics of this indicator for boys and girls are associated with the number of births of children of a given sex. In general, the level of achievements in this scope is satisfactory. However, the level is unsatisfactory in the case of indicator 4.3.1: the participation rate of adults aged 25–64 in formal and non-formal education decreased by approximately 29 (1.5 pp.) in the research period, and the participation rate of adults aged 55–74

² An increase in mathematical skills is highly desirable from the point of view of structuring the economy based on ICT knowledge and technologies.

Table 1: Indicators for tasks 4.1 – 4.3 and their evaluation

| Task | Indicator | Scope | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Dynamics ^a (%) | Change ^a (pp) | Evaluation | |
|------|--|---|------|------|------|------|------|-----------------|------|---------------------------|--------------------------|------------|--|
| 4.1 | 4.1.1. Proportion of young people at the end of gymnasium-level education (age 15) who achieved at least a minimum proficiency level in reading and mathematics ³ (%) | Reading | | | | | | | | | | | |
| | | Total | 85.0 | . | 89.4 | . | . | 85.6 | . | 100.7 | 0.6 | +++ | |
| | | Boys | 86.7 | . | 84.1 | . | . | 83.8 | . | -94.5 | -4.9 | ++ | |
| | | Girls | 96.1 | . | 83.8 | . | . | 94.8 | . | -98.6 | -1.3 | ++ | |
| | | Mathematics | | | | | | | | | | | |
| | | Total | 79.5 | . | 85.6 | . | . | 82.8 | . | 104.2 | 3.3 | +++ | |
| 4.2 | 4.2.2. Participation rate in organized learning (1 year before the official primary entry age) ⁴ (%) | Total | 95.4 | 94.8 | 94.4 | 93.4 | 94.0 | 94.1 | 95.9 | 100.5 | 0.5 | ++++ | |
| | | Boys | 95.1 | 94.7 | 94.4 | 93.4 | 94.1 | 94.1 | 95.9 | 100.8 | 0.8 | ++++ | |
| | | Girls | 95.7 | 94.9 | 94.3 | 93.4 | 94.0 | 94.2 | 95.8 | 100.1 | 0.1 | ++++ | |
| 4.3 | 4.3.1. Participation rate of adults in formal and non-formal education ⁵ (%) | Adults aged 25–64 | 5.2 | 4.4 | 4.5 | 4.3 | 4.0 | 3.5 | 3.7 | -71.2 | -1.5 | + | |
| | | Adults aged 55–74 | 0.8 | 0.6 | 0.6 | 0.7 | 0.8 | 0.6 | 0.8 | 100.0 | 0 | + | |
| 4.4 | 4.4.1.a. Proportion of young people and adults with information and communications technology (ICT) | People aged 16–74: Copying or moving files/folders | 50.1 | 52.0 | 52.5 | 52.5 | 54.9 | 40 ^b | . | 109.6 | 3.8 | ++ | |
| | | Using copy/paste command in order to copy or move selected fragments of | 44.1 | 45.5 | 46.6 | 47.3 | 50.2 | . | . | 113.8 | 6.1 | ++ | |

³ Proportion of students at the required level of proficiency (minimum level 2) as a percentage of the students participating in the research. Data presented in 3-year intervals.

⁴ Proportion of children aged 6 in formal education (one year before the official primary school entry age).

⁵ Proportion of the number of people studying and training in a given age group as a percentage of the people from the same age group. The indicator covers education of adults in adult education, as well as those who have completed obligatory education and are supplementing general knowledge, professional skills and qualification in non-formal education.

| | | | | | | | | | | | | |
|--|---|--|------|------|------|------|------|------|------|-------|------|------|
| | skills, by type (%) | document | | | | | | | | | | |
| | | Using basic mathematical functions in a spreadsheet | 31.2 | 33.3 | 33.0 | 34.1 | 36.1 | . | . | 115.7 | 4.9 | + |
| | | Installing new device | 31.2 | 33.8 | 35.1 | 34.9 | 38.5 | . | . | 119.9 | 6.4 | + |
| | | Moving files between the computer and other devices | 32.1 | 30.9 | 36.5 | 36.7 | 39.7 | . | . | 128.5 | 8.8 | + |
| | | Changing or checking program settings | . | 19.4 | 21.7 | 22.1 | 25.2 | . | . | 129.9 | 5.8 | + |
| | | Creating an electronic presentation with presentation software | . | 16.5 | 20.0 | 19.1 | 21.6 | . | . | 130.9 | 5.1 | + |
| | | Sending e-mails with attachments | 45.8 | 46.8 | 51.1 | 51.5 | 52.9 | . | . | 113.0 | 6.1 | ++ |
| | | People aged 16-24: | | | | | | | | | | |
| | | Copying or moving files/folders | 91.3 | 93.7 | 91.6 | 93.4 | 93.6 | . | . | 102.5 | 2.3 | ++++ |
| | | Using copy/paste command in order to copy or move selected fragments of document | 83.3 | 85.4 | 83.5 | 85.2 | 87.7 | . | . | 105.3 | 4.4 | ++++ |
| | | Using basic mathematical functions in a spreadsheet | 63.5 | 69.7 | 65.1 | 67.9 | 70.4 | . | . | 110.9 | 6.9 | +++ |
| | | Installing new devices | 66.2 | 70.4 | 69.1 | 70.7 | 74.8 | . | . | 113.0 | 8.6 | +++ |
| | | Moving files between the computer and other devices | . | 66.0 | 73.8 | 72.3 | 78.2 | . | . | 118.5 | 12.2 | +++ |
| | | Changing or checking program settings | . | 44.4 | 46.3 | 45.6 | 52.4 | . | . | 118.0 | 8.0 | ++ |
| | | Creating an electronic presentation with presentation software | . | 46.6 | 53.3 | 50.1 | 56.2 | . | . | 120.6 | 9.6 | ++ |
| | | Sending e-mails with attachments | 84.9 | 84.3 | 86.8 | 86.2 | 84.4 | . | . | -99.4 | -0.5 | +++ |
| | 4.4.1.b. Proportion of people with basic or higher digital skills (%) | Total | . | . | . | . | . | 40.1 | 44.4 | 110.7 | 4.3 | ++ |

a - Dynamics or change = the last year with data : the first year with data, b – average value (OECD 2016)

Source: own elaboration, on the basis of the Main Statistical Office (GUS) (Goals 1–17. 2030 Agenda Module. Substantial indicators).

Table 2: Indicators for tasks 4.5 – 4.7 and their evaluation

| Task | Indicator | Scope | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Dynamics ^a (%) | Change ^a (pp) | Evaluation of achievements |
|-------|--|---|------|------|------|------|------|------|------|---------------------------|--------------------------|----------------------------|
| 4.5 | 4.5.1. Sex parity index for education ⁶ | Mathematical achievements by the end of gymnasium | . | . | 1.01 | . | . | 0.97 | . | 96.03 | 0.04 | ++++ |
| | | Achievements in reading by the end of gymnasium | . | . | 1.00 | . | . | 1.13 | . | 113.00 | 0.13 | ++++ |
| | | Participation in pre-primary education of 6-year-olds | 1.01 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 99.00 | 0.01 |
| 4.6 | 4.6.1.a. Percentage of population achieving at least a fixed level of proficiency in functional literacy skills ⁷ (%) | Total | . | . | . | 81.0 | . | . | . | - | - | +++ |
| | | Men | . | . | . | 78.7 | . | . | . | - | - | +++ |
| | | Women | . | . | . | 83.8 | . | . | . | - | - | +++ |
| | Age groups | 16–24 | . | . | . | 90.3 | . | . | . | - | - | ++++ |
| | | 25–34 | . | . | . | 86.5 | . | . | . | - | - | ++++ |
| | | 35–44 | . | . | . | 82.8 | . | . | . | - | - | +++ |
| | | 45–54 | . | . | . | 76.1 | . | . | . | - | - | +++ |
| | | 55–65 | . | . | . | 71.0 | . | . | . | - | - | ++ |
| | 4.6.1.b. Percentage of population achieving at least a fixed level of proficiency in functional numeracy skills ⁸ (%) | Total | . | . | . | 76.0 | . | . | . | - | - | ++ |
| Men | | . | . | . | 76.2 | . | . | . | - | - | ++ | |
| Women | | . | . | . | 76.9 | . | . | . | - | - | ++ | |
| | Age groups | 16–24 | . | . | . | 83.2 | . | . | . | - | - | +++ |
| | | 25–34 | . | . | . | 82.2 | . | . | . | - | - | +++ |
| | | 35–44 | . | . | . | 77.8 | . | . | . | - | - | ++ |

⁶ Proportion of values of selected indicators from the realm of education for women compared to the values of those indicators for men.

⁷ Proportion of the number of people who achieved certain level of proficiency (2 out of possible 8) of reading comprehension as a percentage of the number of people participating in the research.

⁸ Proportion of the number of people who achieved certain level of proficiency (2 out of possible 8) of mathematical reasoning as a percentage of the number of people participating in the research.

| | | | | | | | | | | | | |
|------------|--|--------------------------------|---|---|---|------|---|---|---|--|--|------|
| | | 45–54 | . | . | . | 73.3 | . | . | . | | | ++ |
| | | 55–65 | . | . | . | 66.2 | . | . | . | | | ++ |
| 4.7 | 4.7.1. Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment | In total ⁹ (0;1) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | ++++ |

Source: as above

Table 3: Indicators for tasks 4.a - 4.c and their evaluation

| Task | Indicator | Scope | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Dynamics ^a (%) | Change ^a | Evaluation of achievements |
|-----------|---|-------|-------|-------|-------|-------|-------|-------|-------|------------------------------|---------------------|----------------------------------|
| 4a | 4. a.1. Proportion of people with access to: (a) Electricity (b) The Internet for pedagogical purposes (c) Computers for pedagogical purposes (d) Adapted infrastructure and materials for students with disabilities (e) Basic drinking water (f) Single-sex basic sanitation facilities | a | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0 | ++++ |
| | | b | . | . | . | 93.2 | . | . | . | . | - | - |
| | | c | . | . | . | 90.7 | . | . | . | . | - | - |
| | | d | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0 | ++++ |
| | | e | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0 | ++++ |
| | | f | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0 | ++++ |

⁹ The indicator assumes value = 1 for the given country if education in the scope of sustainable development, with regard for education for gender equality and human rights is conducted in this country, and if those issues are addressed in national educational policy, curriculum, teachers’ education and grading students.

| | | | | | | | | | | | | |
|------------|--|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|------|
| | (g) Basic handwashing facilities (%) | g | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0 | ++++ |
| 4.b | 4.b.1. Volume of official development assistance flows for scholarships ¹⁰ | Total in million PLN | . | . | . | 25.7 | 28.6 | 30.0 | 28.4 | 110.5 | 2 700 000 PLN | ++ |
| 4.c | 4.c.1. Proportion of teachers in education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level | % | | | | | | | | | | |
| | (a) Pre-primary | a | 97.8 | 98.1 | 98.2 | 98.3 | 98.4 | 98.4 | 98.3 | 100.5 | 0.5 pp | ++++ |
| | (b) Primary | b | 99.3 | 99.5 | 99.5 | 99.6 | 99.4 | 99.6 | 99.6 | 100.3 | 0.3 pp | ++++ |
| | (c) Lower secondary | c | 98.7 | 98.8 | 99.0 | 99.1 | 99.2 | 99.2 | 99.3 | 100.5 | 0.5 pp | ++++ |
| | (d) Upper secondary education ¹¹ | c | 98.4 | 98.4 | 98.4 | 98.5 | 98.5 | 98.4 | 98.4 | 100.0 | 0 pp | ++++ |

Source: as above

¹⁰ Official development assistance (ODA) includes donations and loans passed by government institutions or international organizations aimed at supporting economic development and wealth in developing countries. ODA also includes technical assistance aimed at developing human resources, raising qualifications and technical and production capacities of developing countries.

¹¹ The number of teachers with relevant pedagogical education allowed to teach on a given level of education as a percentage of the total number of teachers teaching at the given level.

remained unchanged¹². It is a highly adverse situation from the point of view of both implementation of goals of the 2030 Agenda and the Europa 2020 Strategy, assuming training of at least 15% of adults, and the national goal that by 2010 at least 10% of those people should participate in LLL (Kryk 2016). Implementation of an integrated qualification system did not yield the expected results, so Polish authorities intend to develop a new strategy for improving skills.

It is also very important to raise digital skills in society, as the proportion of adults (aged 16–74) with at least basic digital skills is still relatively low (Table 2). This indicator amounted, on average, to 39.1% in 2010, 39.9% in 2014, and 40% in 2015; so in the course of 5 years it remained virtually unchanged. It was only in 2017 that it reached 46%, but that rate is still lower than the average EU figure of 57%. The level of achievement in this scope is unsatisfactory. The two above-mentioned indicators show how challenging it is to raise skills of adults in the context of an aging society and a changing demand for skills. The proportion of young people (aged 16–24) with digital skills was considerably higher. In 2014, this amounted, on average, to 74.7% and was higher by over 87% than the indicator for all adults. In the course of 4 years it also increased on average by 6.6 pp, which means that achievement in this scope is quite satisfactory. Conversely, the proportion of people with basic or higher digital skills was moderately satisfactory: in 2016 this amounted to 44.4%. If an increase rate of 3% is maintained for this indicator, in 2030 it will reach a satisfactory level, which should be supported with changes occurring in the educational system.

Within Goal 4 of the 2030 Agenda, Poland has reached satisfactory levels for indicators 4.5.1, 4.7.1 (Table 2), 4.a.1, and 4.c.1 (Table 3). In the research period, those indicators reached maximum or near maximum values, and the occurring changes were advantageous. The amount of official development assistance (112 700 000 PLN) dedicated for scholarships (indicator 4.b.1) was also quite satisfactory, which was associated, among others, with European funds intended for development of human resources. Those funds undoubtedly contributed to the implementation of Goal 4. In case of indicator 4.6.1.a, the average level of achievements was also quite satisfactory at 87.7%. It was only in category of people in the highest age group (55–65) that the achievement was evaluated as moderately satisfactory, with the lowest indicator (over 10% lower than the average value). Meanwhile, the level of indicator 4.6.1.b was evaluated as moderately satisfactory at 76.2%. In this case, the value of the indicator was also the lowest for the highest age group.

¹² Participation in education and training and indicators associated with non-formal education of adults are among the lowest in the EU. This is due to, among others: low level of skills of elderly people (older adults are very often not interested in developing their skills or acquiring new skills or qualifications); the recently lowered retirement age, which results in the decrease in people's interest in supplementing their education; limited readiness of enterprises providing training to certain categories of employers; health issues; and the rare occurrence of part-time jobs (Myck, Oczkowska 2017, National report – Poland 2018, 2018).

CONCLUSIONS

Poland has been implementing the concept of sustainable development for many years. This enables it to undertake further activities in this scope and participate in an active and responsible manner in the implementation for the goals of the 2030 Agenda. The Polish perspective of tasks meeting the expectations drawn in the 2030 Agenda was formulated in the *Strategy for Responsible Development until 2020 (with the perspective until 2030)* (2017). The main aim of all the tasks and undertakings provided for in the Strategy is to create an environment for increasing income of Polish citizens, along with an increase of cohesion in social, economic, environmental and territorial scopes. The expected outcome of the Strategy consists in the increase of wealth of Polish citizens and a decrease in the number of people at risk of poverty and social exclusion. A significant role in achieving these results is attributed to, among others, high-quality education and LLL. Therefore, completing tasks in this scope—as indicated in Goal 4 of the 2030 Agenda and approved by Poland—will be beneficial on both national and global levels.

The conducted analysis shows that in the scope of Goal 4 Poland has already achieved much. Five out of ten tasks have been completed (4.2, 4.5, 4.7, 4.a, 4.c), and their corresponding monitoring indicators are high with satisfying level of achievements. The levels of achievements measured with indicators corresponding to tasks 4.1 and 4.6 are quite satisfactory. In this case, there is a high probability that the indicators will rise by 2030. The remaining tasks will be implemented, but it is hard to predict if any spectacular effects will be achieved at this point. This specifically refers to task 4.3, for which the effects are measured with the proportion of adults participating in formal and non-formal education. This indicator measures very low in Poland and the changes made have been unsatisfactory. Increasing this indicator would require coordinated changes in many aspects of social and economic policy and developing a new strategy of formation of skills in adults. An improved level of achievements may be expected for 4.4, since after previous stagnation in this scope between 2015 and 2017, as a result of implementing a program for dissemination of ICT skills the average percentage of young people and adults with these skills increased by 7%. If this rate of increase is sustained, the results in 2030 will be satisfying.

Information on the increase of achievements in the scope of task 4.b, which was associated with using European funds for the development of human capital, remains unknown. Limiting the financial support received for the EU without engaging national funds may lead to reduction of official development assistance for scholarships.

To conclude, Poland has a good chance of implementing the majority of tasks under Goal 4 of the 2030 Agenda.

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Development Trends in Least Developed Countries

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ABSTRACT

The paper presents trends in economic growth and development in twenty least developed countries (LDCs) over the period from 2002 to 2016. The analysis covers ten fastest growing LDCs and ten countries with negative or very low average GDP per capita growth rates during the 15 years. The study is based on the data retrieved from the World Bank Open Data. GDP in the fastest growing LDCs has been primarily generated through services and industry sectors. Services and agriculture sectors have contributed the most to GDP in the slowest growing LDCs. However, in terms of employment, agriculture has been a major sector in most LDCs. On the demand side, domestic private consumption was the main source of growth in the examined LDCs. A few LDCs sustained strong growth mainly because of foreign assistance. In other countries remittances were a significant source of development finance. Resource rich countries recorded high inflows of foreign direct investment. Several LDCs substantially improved their development indicators. To maintain or accelerate economic growth, the analysed LDCs have to improve the business climate, governance, and control of corruption.

Keywords: economic development, economic growth, LDCs.

INTRODUCTION

Least developed countries are low-income countries which face severe structural impediments to sustainable development. They have low levels of human assets and are highly vulnerable to economic and environmental shocks. As of March 2018, the group of LDCs comprises 33 countries in Africa, nine in Asia, four Pacific islands, and Haiti (UN, 2018).

Since the establishing of the category of least developed countries in 1971, only five LDCs have graduated to developing country status: Botswana (in December 1994), Cabo Verde (December 2007), Maldives (January 2011), Samoa (January 2014), and Equatorial Guinea (June 2017). Two more countries are expected to escape from the low development category. Vanuatu will graduate by the end of 2020 and Angola in 2021¹. In 2018, the income-only criterion was satisfied by Tuvalu, Angola, Vanuatu, Kiribati, and Timor-Leste. The countries, except Angola, met also the graduation threshold for the HAI. São Tomé and Príncipe, Bangladesh, and Bhutan satisfied the HAI and GNI per capita criteria. Myanmar met the graduation thresholds for the EVI and GNI per capita and

¹ Countries are eligible to leave the LDC category if they meet the graduation thresholds of the criteria. The graduation thresholds must be met for any two of the three criteria (human assets index (HAI), economic vulnerability index (EVI) and per capita income) in two consecutive triennial reviews. Alternatively countries must satisfy income-only criterion: GNI per capita is at least twice the graduation threshold in two consecutive triennial reviews. HAI is a composition of the following five indicators: under-five mortality rate, percentage of population undernourished, maternal mortality rate, gross secondary school enrolment ratio, and adult literacy rate. Lower values of HAI represent weaker human asset development. EVI is a composite index of population size, remoteness, merchandise export concentration, share of agriculture, hunting, forestry and fisheries in GDP, share of population living in low elevated coastal zones, instability of exports of goods and services, victims of natural disasters, and instability of agricultural production. Higher values of EVI indicate higher vulnerability (UN, 2018).

Nepal for the EVI and HAI². It is worth noting that Bhutan, Nepal, and Timor-Leste met the graduation thresholds in 2015, too. Asia’s LDCs are expected to leave the group of LDCs by 2025 (Nowak, 2017a).

Since the beginning of the twenty first century, several least developed countries have recorded rapid economic growth and made significant progress in economic development. At the same time, other LDCs have experienced negative or very low average GDP per capita growth rates and slightly improved their development indices. The main aim of the paper is to show trends in economic growth and development in ten fastest and ten slowest growing LDCs over the period from 2002 to 2016. The analysis is based on the data retrieved from the World Bank Open Data.

There are a lot of studies on economic growth and development in selected least developed countries. For instance, Cunguara and Hanlon (2012), Berhanu and Poulton (2014), and Oluwatayo and Ojo (2018) examine economic growth and development in African LDCs. Colton (2010), Roberts (2012), Tin (2015), and Leng (2017) focus on Asian least developed countries. The main contribution of this paper to the discussion on economic development in LDCs is a comparison of their development trends using the same set of data.

ECONOMIC GROWTH IN LEAST DEVELOPED COUNTRIES

In the years 2002-2016, Myanmar recorded the highest average GDP per capita growth in the group of least developed countries. The GDP annual growth rate in that country was above 9%. High average annual GDP per capita growth rates were also observed in Ethiopia, Cambodia, and Lao PDR. Slightly lower growth rates were recorded in Bhutan and Rwanda. It is worth nothing that those countries had high growth rates over the period 2007-2016, too. In contrast, the annual GDP growth rate in Yemen averaged -4.7% from 2002 to 2016 and -1.7% in Central African Republic (CAR). The negative growth rates were in a few other LDCs (Table 1).

Table 1: Average GDP per capita growth in the selected LDCs, 2002-2016

Source: Own calculations based on WBOD (2018).

| The fastest growing LDCs | | | The slowest growing LDCs | | |
|--------------------------|------------------------------------|------------------------------------|--------------------------|------------------------------------|------------------------------------|
| Country | Average GDP p.c. growth, 2002-2016 | Average GDP p.c. growth, 2007-2016 | Country | Average GDP p.c. growth, 2002-2016 | Average GDP p.c. growth, 2007-2016 |
| Myanmar | 9.1% | 7.6% | Yemen | -4.7% | -5.7% |
| Ethiopia | 6.2% | 7.4% | CAR | -1.7% | -2.6% |
| Cambodia | 5.9% | 4.9% | Madagascar | -0.4% | -0.1% |
| Lao PDR | 5.9% | 6.2% | Comoros | -0.3% | -0.4% |
| Bhutan | 5.4% | 5.7% | Burundi | -0.3% | -0.2% |
| Rwanda | 5.3% | 4.9% | Haiti | -0.2% | 0.5% |
| Bangladesh | 4.6% | 5.0% | Gambia | -0.1% | 0.3% |
| Sudan | 4.2% | 4.2% | Kiribati | 0.04% | 0.3% |
| Mozambique | 4.1% | 3.6% | Vanuatu | 0.5% | 0.3% |
| Afghanistan | 3.8% | 4.5% | Guinea-Bissau | 0.6% | 1.1% |

During the analysed 15 years, GDP per capita in Myanmar increased more than 3 times, from 432.0 US\$ to 1 408.1 US\$ (in constant 2010 US dollars). The Ethiopian GDP per capita rose from 203.9 US\$ in 2002 to 511.2 US\$ in 2016. Cambodia, Lao PDR, Bhutan, and Rwanda doubled their GDP

² At the 2018 review the thresholds were the following: the three-year average level of per capita GNI (Atlas method) US\$ 1 230 or above, the level of human capital HAI at 66 or above, EVI at 32 or below, and income-only US\$ 2 460 (UN, 2018)

per capita in constant 2010 US dollars. On the other hand, GDP per capita declined by 40% in Yemen and by 20% in Central African Republic.

On the supply side, the services sector contributed more than 50% to GDP in Comoros, Vanuatu, Gambia, Kiribati, Madagascar, Bangladesh, Mozambique, Afghanistan, and Rwanda. Services followed by the industry sector have been generated GDP in Haiti, Yemen, Lao PDR, Cambodia, and Myanmar and services followed by agriculture in Burundi, Ethiopia, Sudan, and Central African Republic. Industry sector followed by services have been generated GDP in Bhutan and agriculture sector followed by services in Guinea-Bissau. Except Bhutan, Haiti, Yemen, and Lao PDR, the manufacturing industry has been contributed less than 20% to GDP of the remaining countries (WBOD, 2018). Generally, economies of LDCs have been dominated by the informal sector, with numerous micro and small businesses that geared towards the local markets (Nowak, 2017b).

In terms of employment, agriculture has been a major sector in most LDCs. In Burundi, above 90% of the population were engaged in agricultural activities in 2016. Agriculture provided the main livelihood for more than 70% of the population in Lao PDR, Rwanda, Mozambique, Madagascar, Central African Republic, and Ethiopia. More than 60% of labour force was employed in agriculture in Comoros, Vanuatu, and Guinea-Bissau. Only in Myanmar, Gambia, and Yemen, more than half of labour force was employed in the services sector (UNCTAD, 2017).

On the demand side, domestic private consumption has been the main source of growth in most countries. The average share of household final consumption expenditure in GDP was more than 80% in Haiti, Central African Republic, Guinea-Bissau, Gambia, Comoros, Madagascar, Burundi, Cambodia, and Yemen. In Afghanistan the share was exceptionally high (110%). Bhutan is the only country with the average share of domestic private consumption in GDP less than 50%. The contribution of government final consumption expenditure to GDP was relatively high in Lao PDR and Burundi. The share of gross domestic investment (gross capital formation) in GDP more than 50% was observed in Ethiopia and Bhutan.

In the years 2002-2016, exports of goods and services were an important driver of growth in Cambodia (60% of GDP) and Vanuatu (more than 40%). The average share of exports in GDP was more than 30% in Bhutan, Lao PDR, and Mozambique. Madagascar and Myanmar recorded the largest increase in the share of exports in GDP. In Yemen, Afghanistan, and Liberia the share of exports in GDP declined the most. Exports were a really small share of GDP in Burundi.

According to the export specialisation (the type of exports accounted for at least 45 per cent of total exports of goods and services in the years 2014-2016) Afghanistan, Central African Republic, Comoros, Ethiopia, Gambia, Rwanda, and Vanuatu are classified as services exporters. Burundi, Kiribati, Lao PDR, Madagascar, Mozambique, Myanmar, and Sudan are mixed exporters. Bangladesh, Bhutan, Cambodia, and Haiti are considered to be manufactures exporters and Guinea-Bissau an agricultural and food exporter. Yemen is classified as a fuel exporter (UNCTAD, 2017).

Remittances have been the primary source of foreign exchange in Haiti. In the years 2002-2016, they were equivalent to a fifth of the Haitian GDP. Remittances from diaspora have been important sources of income in Comoros, Gambia, Kiribati, Bangladesh, and Yemen. Least developed countries have benefited from official development assistance (ODA). During the analysed period, the average share of ODA in GNI was bigger than 10% in twelve countries. Afghanistan, Burundi, Mozambique, Kiribati, and Rwanda have been the most aid-dependent countries. The countries that have attracted foreign direct investment (FDI) were Mozambique, Cambodia, and Gambia. FDI flows into Kiribati, Burundi and Yemen have been negligible (Table 2).

Table 2: Remittances, net ODA and net FDI inflows as per cent of GDP, 2002-2016

| The fastest growing LDCs | | | | The slowest growing LDCs | | | |
|--------------------------|-------------|-------|-------|--------------------------|-------------|-------|------|
| Country | Remittances | ODA | FDI | Country | Remittances | ODA | FDI |
| Afghanistan | 1.7% | 36.5% | 1.4% | Burundi | 1.1% | 27.5% | 0.7% |
| Bangladesh | 8.0% | 1.6% | 1.0% | CAR | n.a. | 14.3% | 1.8% |
| Bhutan | 0.7% | 9.0% | 1.5% | Comoros | 17.4% | 10.2% | 1.1% |
| Cambodia | 2.0% | 7.4% | 8.4% | Gambia | 11.6% | 12.5% | 5.7% |
| Ethiopia | 1.4% | 11.7% | 2.7% | Guinea-Bissau | 5.7% | 14.7% | 1.8% |
| Lao PDR | 0.4% | 8.1% | 4.2% | Haiti | 22.8% | 14.8% | 1.3% |
| Mozambique | 1.0% | 19.3% | 16.3% | Kiribati | 10.1% | 17.9% | 0.4% |
| Myanmar | 0.8% | 1.7% | 3.1% | Madagascar | 2.3% | 9.7% | 6.1% |
| Rwanda | 1.6% | 17.9% | 2.1% | Vanuatu | 0.6% | 12.6% | 6.1% |
| Sudan | 2.6% | 3.6% | 3.7% | Yemen | 7.9% | 2.5% | 0.8% |

Note: Data on remittances for Afghanistan cover the period 2008-2016, for Burundi 2004-2016, Bhutan and Kiribati 2006-2016, Comoros and Gambia 2003-2016. Data on FDI inflows for Burundi cover the period 2004-2006 and for Vanuatu 2002-2015. Data on ODA for Vanuatu cover the period 2002-2014.

Source: Own calculations based on WBOD (2018).

To maintain or accelerate economic growth, the analysed LDCs have to improve the business climate, governance, and control of corruption. The most favourable environment for business start-ups and entrepreneurs has been created in Rwanda. The country ranks the 41st out of 190 in the World Bank Group Flagship Report Doing Business 2018. The second country in the group of the analysed LDCs which has the most business-friendly regulations is Bhutan. It was ranked the 75th. The third highest ranked country is Vanuatu (the 90th). The remaining LDCs were very low ranked and their domestic firms face very costly and time-consuming process. According to the 2017 Corruption Perceptions Index, Bhutan and Rwanda rank highest with scores of 67 and 55 respectively. Afghanistan, Sudan, and Yemen rank lowest with scores of 15, 16 and 16 respectively³ (CPI, 2017). Bhutan and Pacific countries have the best quality of national governance in the group of LDCs. Yemen, Afghanistan, and Central African Republic are countries with the poorest governance (Table 3).

Economic growth in the analysed LDCs has been constrained by civil war (Burundi, Central African Republic, and Yemen), political instability (Afghanistan, Burundi, Comoros, CAR, Guinea-Bissau, Haiti, Madagascar, Sudan), vulnerability to natural disasters like fires (Comoros), flooding (Afghanistan, CAR), extreme weather (Comoros, Haiti, Kiribati, and Vanuatu), El Niño phenomenon (Burundi, Sudan), shortage of skilled workers, electricity shortages, poor condition of infrastructure, underdeveloped financial system, limited access to credit and financial instruments, weak legal system, pervasive corruption, weak protection of property rights, lengthy procedure to obtain the required investment authorisation, high transaction costs, strict foreign exchange controls and high interference of the state in the economy (Ethiopia), and remoteness from international markets (Kiribati, Vanuatu). Another problem of the analysed countries is a young and rapid increasing population.

³ The Corruption Perceptions Index ranks countries on a scale of zero (highly corrupt) to 100 (very clean).

Table 3: Worldwide Governance Indicators for the analysed LDCs in 2016

Source: WGI (2017).

| Country | Voice and accountability | Political stability and absence of violence/terrorism | Government effectiveness | Regulatory quality | Rule of law | Control of corruption |
|---------------------------------|--------------------------|---|--------------------------|--------------------|-------------|-----------------------|
| The fastest growing LDCs | | | | | | |
| Afghanistan | -1.09 | -2.75 | -1.22 | -1.33 | -1.78 | -1.56 |
| Bangladesh | -0.56 | -1.24 | -0.69 | -0.80 | -0.91 | -0.80 |
| Bhutan | -0.05 | 0.99 | 0.49 | -0.67 | 0.13 | 1.14 |
| Cambodia | -1.14 | 0.18 | -0.69 | -0.47 | -1.06 | -1.30 |
| Ethiopia | -1.45 | -1.57 | -0.64 | -1.10 | -0.93 | -0.44 |
| Lao PDR | -1.73 | 0.50 | -0.39 | -0.73 | -0.99 | -0.93 |
| Mozambique | -0.39 | -1.05 | -0.85 | -0.70 | -0.73 | -0.87 |
| Myanmar | -0.85 | -0.63 | -0.98 | -0.87 | -1.42 | -0.65 |
| Rwanda | -1.21 | -0.05 | 0.11 | 0.11 | -1.22 | 0.69 |
| Sudan | -1.80 | -2.38 | -1.41 | -1.49 | -1.60 | -1.61 |
| The slowest growing LDCs | | | | | | |
| Burundi | -1.51 | -2.08 | -1.40 | -0.83 | -1.35 | -1.18 |
| CAR | -1.13 | -1.74 | -1.77 | -1.43 | -1.28 | -1.28 |
| Comoros | -0.18 | -0.02 | -1.54 | -1.05 | -1.29 | -0.64 |
| Gambia | -1.28 | -0.52 | -0.84 | -0.51 | -0.20 | -0.80 |
| Guinea-Bissau | -0.70 | -0.50 | -1.64 | -1.24 | -1.32 | -1.56 |
| Haiti | -0.73 | -0.67 | -2.06 | -1.24 | -1.46 | -1.35 |
| Kiribati | 1.03 | 0.87 | -0.45 | -0.84 | 0.59 | 0.25 |
| Madagascar | -0.27 | -0.40 | -1.17 | -0.69 | -0.24 | -0.90 |
| Vanuatu | 0.69 | 0.51 | -0.88 | -0.29 | 0.39 | -0.10 |
| Yemen | -1.65 | -2.79 | -1.82 | -1.48 | -1.46 | -1.67 |

Note: Governance score ranges from approximately -2.5 (weak) to +2.5 (strong) governance performance.

PROGRESS IN ECONOMIC DEVELOPMENT IN LEAST DEVELOPED COUNTRIES

Vanuatu, followed by Bhutan have the highest level of GDP per capita in the analysed group of LDCs. In 2016, the value of Vanuatu's GDP per capita (in constant 2010 US\$) was 8.8 times bigger than that of CAR and 13.2 times that of Burundi. The considered LDCs differ substantially in the level of economic development. According to the Human Development Index (HDI), Bhutan, Vanuatu, Kiribati, Lao PDR, Bangladesh, Cambodia, Nepal, and Myanmar were classified as medium human development countries in 2015. The remaining LDCs were low human development countries. Between 2000 and 2015, Rwanda, Ethiopia, and Cambodia improved the most their HDI. The level of HDI only slightly increased in Central African Republic and Yemen (HDR, 2016).

The countries are very different in terms of literacy. Less than a third of the population is literate in Afghanistan. Ethiopia has a literacy rate of 39.0% and Gambia of 42%. In contrast, 84.7% of the population in Lao PDR and 83.2% in Vanuatu can read and write (UN, 2018).

In the years 2002-2015, life expectancy at birth has increased by more than 15 years in Rwanda and 11 years in Ethiopia. Yemen improved its life expectancy index by 3.8 years and Central African Republic by 7.7 years. In Kiribati people born in 2015 are expected to live more than 1.7 years than those born in 2002. Bangladesh, Vanuatu, Bhutan, Cambodia, and Rwanda are among the top ten least developed countries with the highest life expectancy at birth. Bangladeshis live on average 20.8 years longer than Central Africans and 15.3 years longer than Bissau-Guineans.

Rwanda, followed by Cambodia and Bangladesh are leaders in the reduction of infant and under-five mortality (Table 4). In absolute terms, the number of deaths of children under one year of age per 1 000 live births decreased in Rwanda by 70.1. Mozambique reduced infant mortality by 51.9 deaths and Guinea-Bissau by 41.7. Under-five mortality has been reduced by 125.6 deaths per 1 000 live births in Rwanda and by 85.1 in Mozambique. In Guinea-Bissau the under-five mortality ratio declined by 75.3. Despite the reductions infant and child mortality remain still high in LDCs countries. In 2016, the infant mortality rate fluctuated from 23.1 deaths per 1 000 live births in Vanuatu to 88.5 in Central African Republic and under-five mortality from 27.6 in Vanuatu to 123.6 in Central African Republic. Between 2002 and 2015, the maternal mortality ratio decreased by more than 60 per cent in Rwanda, Bhutan, and Afghanistan. In absolute terms, the largest progress in the reduction of maternal mortality has been observed in Afghanistan (the decline by 600 deaths) and Rwanda (580). Vanuatu and Kiribati have the smallest maternal mortality ratios (78 and 90 deaths per 100 000 live births in 2015, respectively). The maternal mortality still remains a big problem in the African LDCs.

Table 4: Reduction in infant, under-five, and maternal mortality ratios, 2002-2016

Source: Own calculations based on WBOD (2018).

| The fastest growing LDCs | | | | The slowest growing LDCs | | | |
|--------------------------|------------------------|-------------------------|--------------------------------|--------------------------|------------------------|-------------------------|--------------------------------|
| Country | Mortality rate, infant | Mortality rate, under-5 | Maternal mortality (2002-2015) | Country | Mortality rate, infant | Mortality rate, under-5 | Maternal mortality (2002-2015) |
| Afghanistan | 38.2% | 42.4% | 60.2% | Burundi | 44.7% | 49.3% | 20.7% |
| Bangladesh | 51.5% | 56.4% | 51.8% | CAR | 20.1% | 26.9% | 24.6% |
| Bhutan | 48.9% | 53.2% | 60.3% | Comoros | 25.5% | 28.7% | 28.9% |
| Cambodia | 61.3% | 65.1% | 60.0% | Gambia | 29.5% | 39.9% | 17.3% |
| Ethiopia | 49.8% | 55.4% | 58.3% | Guinea-Bissau | 41.9% | 46.1% | 30.8% |
| Lao PDR | 36.7% | 40.9% | 60.0% | Haiti | 27.9% | 31.6% | 25.5% |
| Mozambique | 49.4% | 54.4% | 41.8% | Kiribati | 16.7% | 18.8% | 41.2% |
| Myanmar | 35.9% | 40.4% | 37.3% | Madagascar | 45.5% | 51.8% | 33.0% |
| Rwanda | 70.6% | 76.5% | 66.7% | Vanuatu | 2.5% | 2.5% | 40.9% |
| Sudan | 29.3% | 33.6% | 38.3% | Yemen | 31.3% | 35.5% | 10.7% |

The largest progress in access to electricity has been made by Afghanistan and Bhutan. Generally, the analysed LDCs have problem with electricity access. In 2014, 100 per cent of the population had access to electricity only in Bhutan. More than 70% of population had access in Afghanistan, Lao PDR, Comoros, and Yemen. In the remaining LDCs (except Bangladesh, Cambodia, and Myanmar) more than 50% of the population lacked access to electricity. Cambodia, Lao PDR, and Ethiopia made the largest progress in access to clean and safe drinking water. In 2015, more than 90% of the population had access to improved water only in Vanuatu, Gambia, and Comoros. In contrast, nearly a half of Mozambicans and Malagasy had problem with access to improved drinking water. In all countries, except Sudan and Gambia, the proportion of population using improved sanitation facilities has increased. However, in 2015, above 60% of the population had access to improved sanitation only in Myanmar, Lao PDR, Rwanda, and Bangladesh (Table 5).

The analysed least developed countries have a big problem with poverty. For instance, in the years 2014-2016, more than 58% of the population were undernourished in Central African Republic and more than 42% in Haiti and Madagascar. A high level of poverty has been still observed in Rwanda (41.4% of undernourished population) and Tanzania (32.3%) (FAO, 2017).

Table 5: Changes in the access to electricity and improved water and sanitation (in percentage points), 2002-2015

Source: Own calculations based on WBOD (2018).

| The fastest growing LDCs | | | | The slowest growing LDCs | | | |
|--------------------------|-----------------------|-----------------------|--------------------------------|--------------------------|-----------------------|-----------------------|--------------------------------|
| Country | Access to electricity | Improved water source | Improved sanitation facilities | Country | Access to electricity | Improved water source | Improved sanitation facilities |
| Afghanistan | 86.0 | 21.5 | 7.4 | Burundi | 2.7 | 3.5 | 3.2 |
| Bangladesh | 26.3 | 9.4 | 13.0 | CAR | 5.8 | 5.1 | 4.0 |
| Bhutan | 57.9 | 13.4 | 16.3 | Comoros | 29.0 | 0.0 | 9.2 |
| Cambodia | 36.3 | 29.4 | 22.6 | Gambia | 15.0 | 6.2 | -0.6 |
| Ethiopia | 13.9 | 24.6 | 16.8 | Guinea-Bissau | 17.2 | 23.8 | 7.1 |
| Lao PDR | 31.8 | 25.6 | 36.5 | Haiti | 4.5 | -3.1 | 5.5 |
| Mozambique | 12.3 | 8.5 | 5.5 | Kiribati | -23.7 | 6.6 | 4.5 |
| Myanmar | 5.0 | 11.7 | 14.7 | Madagascar | 2.9 | 11.9 | 1.5 |
| Rwanda | 13.3 | 8.4 | 12.7 | Vanuatu | 10.6 | 16.1 | 13.3 |
| Sudan | 9.7 | -5.1 | -1.2 | Yemen | 18.2 | 5.8 | 10.8 |

Note: Data on access to electricity cover the period 2002-2014 and data on improved water and sanitation facilities for Sudan cover the period 2002-2014 and for Yemen 2002-2012.

CONCLUSIONS

In the years 2002-2016, four Asian least developed countries (Myanmar, Cambodia, Lao PDR, and Bhutan) and two LDCs in Africa (Ethiopia and Rwanda) recorded really high GDP per capita growth. In contrast, seven LDCs had negative GDP per capita growth rates. Economies of Yemen and Central African Republic are examples of the biggest growth disasters in the 21st century. Civil wars, political unrest and conflicts, displacement of people, and climate-related shocks caused economic collapse and the destruction of rural and urban livelihoods in several LDCs.

GDP in the fastest growing LDCs has been primarily generated through services and industry sectors. Services and agriculture sectors have contributed the most to GDP in the slowest growing LDCs. However, agriculture provided the main livelihood for the population in most least developed countries. On the demand side, domestic private consumption was the main source of growth in the examined LDCs.

A few LDCs sustained strong growth mainly because of foreign assistance. In other countries remittances were a significant source of development finance. Resource rich countries recorded high inflows of foreign direct investment. To maintain and/or accelerate economic growth, LDCs have to improve the business climate, governance, and control of corruption.

During the analysed 15 years, several LDCs substantially improved their development indicators.

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Smart mobility in the selected EU cities

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ABSTRACT

Smart and sustainable urban development is the current priority. Mobility is one of the most difficult topics to face in the urban areas. Good mobility for citizens and businesses greatly increases the attractiveness and competitiveness of cities. Meeting Europe's 2020 targets, tackling congestion, improving air quality, accessibility and sustainability in cities requires substantial changes in the transport system and its operations, and in the mobility behaviour of people and businesses. Promoting the use of electric vehicles and clean fuels and raising the attractiveness of public transport, collective transport, and cycling comes hand-in-hand with improving infrastructures and increasing intermodality between different transport types. This paper explores smart mobility issues in the selected EU medium-sized cities. The aim of the paper is to present one of the methods used to compare the smart urban development, taking as a case study mobility dimension in three European cities: Valladolid, Bremen and Szczecin. The study is based on the literature sources analysis and data regarding six key fields of smart urban development with a special regard to smart mobility indicators. German city reaches the best results and the Spanish and Polish city represents more or less the same level.

Keywords: *Smart mobility, medium-sized EU cities, urban development.*

INTRODUCTION

Cities nowadays face complex challenges to meet objectives regarding socio-economic development and quality of life. The concept of “smart cities” is a response to these challenges. Mobility is one of the most difficult topics to face in urban areas. It involves both environmental and economic aspects, and needs both high technologies and virtuous people behaviours. Dynamical urban development and inhabitants lifestyle changes result in a continuous increase of their transport needs. As transport behaviours change, the number of vehicles on streets grows resulting in congestion, an increased number of accidents, exhaust and noise emissions and, consequently, a lowered quality of life. Thus a smart and sustainable approach to urban mobility and transport planning is becoming increasingly common in all EU countries. It is crucial to manage and plan the growth of the city supporting economic growth and competitiveness and by getting social cohesion and environmental sustainability. The aim of the paper is to present one of the methods used to compare the smart urban development, taking as a case study mobility dimension in three European cities: Valladolid, Bremen and Szczecin. The study is based on the literature sources analysis and data regarding six key fields of smart urban development with a special regard to smart mobility indicators.

CITY AND URBAN DEVELOPMENT: SMART MOBILITY CHALLENGES

In 2050 people living in cities are to constitute 2/3 (66%) of the global population. The data confirms the assumptions that contemporary cities are facing a challenge related to keeping the balance of resources and strengthening development which would improve security and the quality of life for numerous citizens. Urban centres should: integrate their community, close the material

and energy flow, stimulate the economy and involve citizens in it, strengthen the identity and sense of belonging, provide security, health, be inexpensive in everyday use and provide a just access to its resources, and be governed at metropolitan level (World Urban Forum, 2014).

In the European Union more than 60% of the population lives in urban areas. Almost 85% of European Union GDP is generated there. Cities boost the economy, attract investors, new jobs are established there; that is why cities play an important role in the economy. Transport produces 40% of CO₂ emission and 70% of other pollution emissions in cities (*White Paper*, 2011). Because of this phenomenon the European economy incurs losses, nearly EUR 100 billion, which translates into about 1% of GDP. Apart from cities, ambitious challenges at global, European and national level are now being established. The EU Territorial Agenda (*Territorial Agenda*, 2011) points out the need to make cities the centres of “smart and sustainable” development which will favour social inclusion and increase its attractiveness as a place of residence, work, investments and tourism. This document was a basis for the *Urban Agenda*, covering twelve priority themes, including urban mobility. Urban transport is responsible for about a quarter of CO₂ emissions from transport. The gradual phasing out of ‘conventionally-fuelled’ vehicles from the urban environment is a major contribution to significant reduction of oil dependence, greenhouse gas emissions and local air and noise pollution. Fully Electric Vehicles (FEV), for public and private transport, can contribute significantly to the lowering of the current pollution levels.

In the early 1990s the phrase “smart city” was coined to signify how urban development was turning towards technology, innovation and globalisation (Schaffers and all, 2018). The World Foundation for Smart Communities advocated the use of information technology to meet the challenges of cities within a global knowledge economy. However, the more recent interest in smart cities can be attributed to the strong concern for sustainability, and to the rise of new Internet technologies, such as mobile devices (e.g. smart phones), the semantic web, cloud computing, and the Internet of Things (IoT) promoting real world user interfaces. The concept of smart cities seen from the perspective of technologies and components has some specific properties within the wider cyber, digital, smart, intelligent cities literatures. It focuses on the latest advancements in mobile and pervasive computing, wireless networks, middleware and agent technologies as they become embedded into the physical spaces of cities. The emphasis on smart embedded devices represents a distinctive characteristic of smart cities compared to intelligent cities, which create territorial innovation systems combining knowledge-intensive activities, institutions for cooperation and learning, and web-based applications of collective intelligence (Komninos, 2002 and 2008).

The new European Commission's planning concept proposals treats challenges related to transport in a more smart, sustainable, integrate and comprehensive way (*Guidelines Developing and Implementing a Sustainable Urban Mobility Plan*, 2013). It focuses on involving stakeholders, coordinating the vision between social and economic sectors (land management, transport, social policy, safety, health, etc.) as well as between authorities (Przybyłowski, 2013). It requires a sustainable, long-term vision of urban area, taking into account broader costs and social benefits. Its aim is to meet the mobility needs of people and companies (European Platform, 2016). It proposes actions improving the quality of life (Lopez-Ruiz, et al., 2013). The table 1 presents a new way of planning urban mobility.

Planning has become an increasingly complex task, and planners (as well as policy makers) are faced with many, often contradictory demands: maintaining a high quality of life while also creating an attractive environment for businesses; restricting traffic in sensitive areas while not curbing the necessary movement of goods and people; ensuring mobility for all while being confronted with financial constraints. In addition there are wider issues to be addressed, with regards to public health, climate change, oil dependency, noise and air pollution, etc. Particularly in urban areas – centres of economic activity and home to an increasing share of Europe's population – addressing these issues is a complex matter (Studzieniecki, 2016).

Table 1: A new way of planning urban mobility

Source: Wefering, F., Rupprecht, S., Bührmann, S., & Böehler-Baedeker, S. (2013). Developing and implementing a sustainable urban mobility plan. Retrieved 23.03.2018 from <http://www.eltis.org>.

| Traditional transport planning | Sustainable Urban Mobility Planning |
|---|---|
| Focus on traffic | Focus on people |
| Primary objectives: Traffic flow capacity and speed | Primary objectives: Accessibility and life quality |
| Planning by experts | Planning with the involvement of stakeholders using a transparent and participatory approach |
| Domain of traffic engineers | Interdisciplinary planning teams |
| Infrastructure focus | Integrated set of actions to achieve cost-effective solutions |
| Related to administrative area | Related to functioning area based on travel-to-work patterns |
| Sectorial planning document | Sectorial planning document consistent and complementary to related policy areas (land use and spatial planning, social services, health, enforcement and policing, etc.) |
| Limited impact assessment | Regular monitoring and evaluation of impacts to inform a structured learning and improvement process |

Contemporary EU cities take many actions aiming at smart and sustainable mobility, for example, by increasing the awareness of their citizens. In order to increase participation, modernisation and building infrastructure in cities are important, as well as increasing gradually the integration of all transport means and forms. At the same time campaigns and active promotions affecting the transport habits of urban traffic users are becoming increasingly important. Today much attention is paid to information policy and the improvement of active mobility image as an important means of urban transport. Initiatives taken in favour of urban mobility may help in shaping the future of the contemporary society, putting the main focus on the quality of life, citizens' needs and the principle of sustainable development. These actions aim at focusing citizens' attention on the need to improve air quality, decrease congestion in city's main streets, but most of all to invest in your own health and physical condition, which increases the level of citizens' quality of life, and in turn provides the city with considerable economic benefits. They create favourable conditions for the *smart city* concept – a smart space streamlined by innovations, digital and civil society development (tolerance, talent, and technology).

There are good reasons to put mobility at the heart of Smart Cities policies (Sustainable Urban Mobility, 2018):

- With Sustainable Urban Mobility Plans, Urban Mobility has the framework for integrated planning. New approaches to urban mobility planning are emerging as local authorities seek to break out of past silo approaches and develop strategies that can stimulate a shift towards cleaner and more sustainable transport modes.

- In all modes of transport, and for both transport of goods and passengers, electrification is happening. This brings – with the advantages such as clean air, energy independency etc. – also a set of challenges (deployment of charging infrastructures, links with shared mobility).
- Urban transport is a key area for the transition towards the sharing economy. Both public initiative (public bicycles, shared cargo-bikes, etc.) as private initiative (ridesharing applications, car sharing, peer to peer parking apps) see the benefit of making better use of urban transport assets.
- Transport is an endless source of interesting data. The traveler is becoming more and more connected. Vehicles are connected, public transport users check in and check out with smart cards, cyclists and pedestrians use apps to monitor their movement. These data are becoming increasingly available through open data portals of cities.

SMART MOBILITY IN THE SELECTED EU MEDIUM-SIZED CITIES

Many initiatives are being developed in the framework of the Smart Cities projects, however, there is a lack of consistent indicators and methodologies to assess, finance, prioritize and implement this kind of projects. *Smart Cities* projects are classified according to six axes: Government, Mobility, Environment, Economy, People and Living (fig. 1), built on the ‘smart’ combination of endowments and activities of self-decisive, independent and aware citizens. To receive results on the level of factors, characteristics and the final result for each city it has been necessary to aggregate the values on the indicator level. For the aggregation of a respective group of indicators to domains also the coverage rate of each indicator have been considered (Giffinger & aall, 2007). The aggregation was done additive but divided through the number of values added. On the fig. 1, three EU medium-sized have been compared regarding 6 key fields of smart urban development (www.smart-cities.eu, 2018).

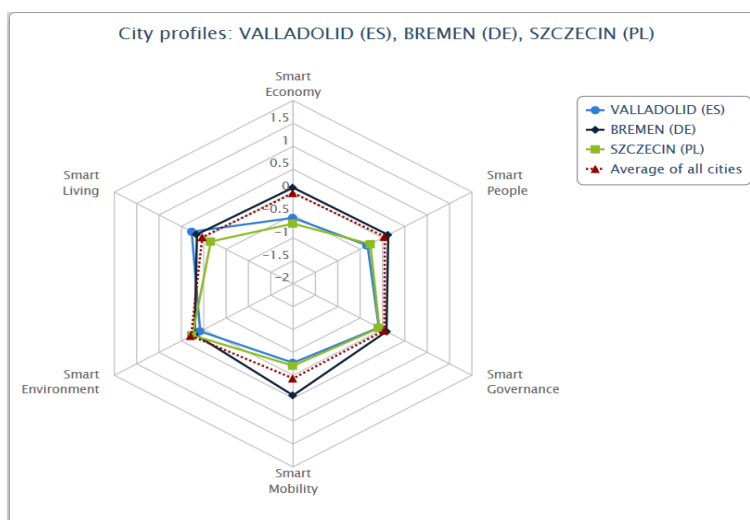


Figure 1: Valladolid, Bremen and Szczecin smart cities profiles - 6 key fields of smart urban development.

Source: own elaboration based on: <http://www.smart-cities.eu/index.php?cid=5&city=47&ver=4>, retrieved April 3, 2018.

As one may observe, Bremen is the city reaching the EU average level in all fields. In case of the smart mobility dimension, the result is even better. When it comes to Valladolid and Szczecin, their rank is below the average, especially in case of the smart economy, people, but also mobility. However, the Spanish city reaches the best score in the smart living category.

When it comes to smart mobility issue in detail, the selected indicators’ weight have been presented in tab. 1.

Tab. 2: Smart Mobility indicators’ weight

Source: own elaboration based on: <http://www.smart-cities.eu/index.php?cid=5&city=47&ver=4>, retrieved April 3, 2018.

| | |
|--|----|
| Local Transport System | 2 |
| (Inter-)national accessibility | 1 |
| ICT-Infrastructure | 4 |
| Sustainability of the transport system | 6 |
| | 13 |

On figure 2, 3 and 4 smart mobility level of the selected cities have been presented.

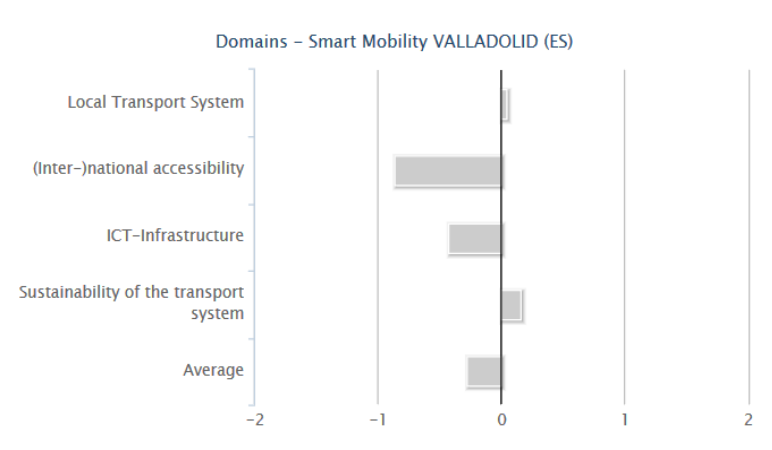


Figure 2: Valladolid smart mobility level.

Source: own elaboration based on: <http://www.smart-cities.eu/index.php?cid=5&city=47&ver=4>, retrieved April 3, 2018.

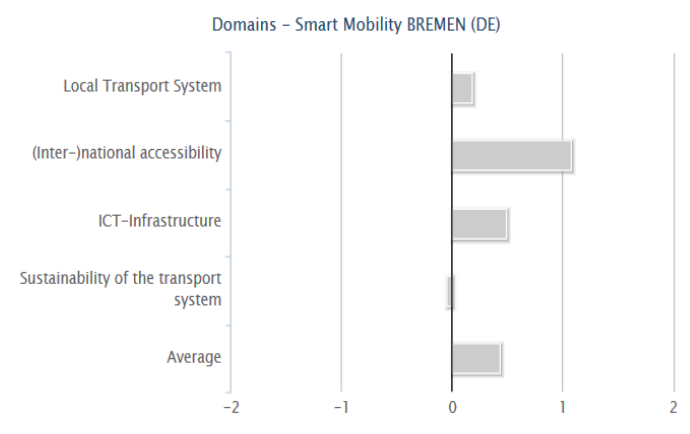


Figure 3: Bremen smart mobility level.

Source: own elaboration based on: <http://www.smart-cities.eu/index.php?cid=5&city=47&ver=4>, retrieved April 3, 2018.

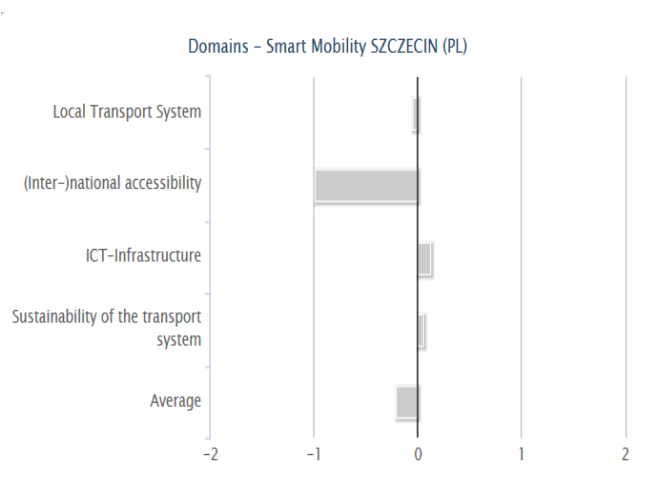


Figure 4: Szczecin smart mobility level.

Source: own elaboration based on: <http://www.smart-cities.eu/index.php?cid=5&city=47&ver=4>, retrieved April 3, 2018.

As one may see, the Spanish and the Polish cities reaches the poorest results in case of inter and national accessibility. Actually, the German city' score in this respect is by far the best. Surprisingly, as far as sustainability of the transport system is concerned, Szczecin and especially Valladolid obtain better results than Bremen. On the contrary, the Spanish city lowers its result because of the ICT-Infrastructure indicator level. When it comes to the Local Transport System measure, the Polish city reveals to be the one where urgent improvement is necessary.

Good mobility for citizens and businesses greatly increases the attractiveness and competitiveness of cities, especially medium-sized ones vulnerable to globalization processes. Meeting Europe's 2020 targets, tackling congestion, improving air quality, accessibility and sustainability in cities requires substantial changes in the transport system and its operations, and in the mobility behaviour of people and businesses. Promoting the use of electric vehicles and clean fuels and raising the attractiveness of public transport, collective transport, and cycling comes hand-in-hand with improving infrastructures and increasing intermodality between different transport types.

CONCLUSIONS

Nowadays, cities are challenged to introduce more strategic instruments in order to concentrate relevant organizational capacities and to identify most relevant strategic projects steering urban and metropolitan development in an effective and competitive way. Against the background of economic and technological changes caused by the globalization and the integration process, cities in Europe face the challenge of combining competitiveness and smart and sustainable urban development simultaneously. Very evidently, this challenge is likely to have an impact on issues of urban quality such as housing, economy, culture, social and environmental conditions. Initiatives taken in favour of urban mobility may help in shaping the future of the contemporary society, putting the main focus on the quality of life, citizens' needs and the principle of sustainable development. These actions aim for example at focusing citizens' attention on the need to improve air quality, decrease congestion in city's main streets, but most of all to invest in your own health and physical condition, which increases the level of citizens' quality of life, and in turn provides the city with considerable economic benefits.

The contribution of this paper consists on presenting the importance of the mobility dimension that is in fact at the heart of Smart Cities policies. It also shows what kind of indicators may be used to measure the level of smart urban development. The comparison of the three medium-sized EU cities reveals that Spanish and Polish urban areas should follow the solutions implemented in Germany in order to become smarter and more sustainable places to live, especially as far as the smart mobility is concerned. Such a comparison of cities can support investors in their choice of location, on the other hand it can be an important guide for the cities to judge their strengths and weaknesses and to define their goals and strategies for future development and better positioning in the urban system.

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Bankruptcy system model and efficiency versus the entrepreneurship and innovation in selected European countries

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ABSTRACT

The aim of the article is to fill the cognitive gap related to the impact of the bankruptcy system model and its efficiency on the development of entrepreneurship and innovation in selected European countries and Turkey. This goal was achieved by examining the relationships between debtor-friendliness of the bankruptcy law model and its efficiency on one side and entrepreneurship and innovation on the other. The cross-sectional ANOVA test and OLS regression method were chosen as the research method. In order to verify the research hypothesis, the following variables were standardized: ease of second chance, severity of bankruptcy procedures index and resolving insolvency index. In the next step, on the basis of their standardized values, factorization in pairs (debtor-friendliness of bankruptcy law versus its efficiency and debtor-friendliness of bankruptcy law versus risk tolerance) was performed according to the mean. Such standardization and classification made it possible to analyse the variance of the "risk acceptance" variable in relation to the factor of the (low and high) classes of the above-mentioned bound variables. Finally, two studies were conducted using the classic analysis of variance. The analysis of the research results showed that the debtor-friendliness of the bankruptcy law measured by the ease of second chance index fails to increase the entrepreneurs' tolerance of risk. However, the efficiency of the bankruptcy system measured with the resolving insolvency index does increase entrepreneurs' risk tolerance risk in the countries surveyed. Next, it was checked whether the entrepreneurs' higher risk tolerance is accompanied by the development of entrepreneurship and innovativeness. Based on regression models, the above relations were confirmed.

Keywords: *bankruptcy law model, efficiency, risk, entrepreneurship, innovation*

INTRODUCTION

Entrepreneurship and innovation are key elements of economic development and depend on many determinants. They are affected, inter alia, by the barriers to entry and exit from the market and the related approach to risk. While the issue of the influence of market entry barriers on entrepreneurship is relatively well-described in the subject literature (Klapper, Leaven, Rajan 2006; Santarelli, Vivarelli 2007; Aidis, Estrin, Mickiewicz 2012; Fan & Zhang 2017), relatively little interest has been devoted to the relations between exit barriers and entrepreneurship or innovation.

The exit barriers depend largely on the model of bankruptcy law and may be favourable for debtors (pro-debtor) or creditors (pro-creditor) (Froute 2007). The bankruptcy law that favours debtors allows insolvent entrepreneurs to go through the bankruptcy process in a much faster and less painful way and enables them to have a new start, providing them with a chance to establish another business without burdens from the past (fresh start). As a consequence, such a system accepts the possibility of entrepreneur's failure and at the same time reduces the risk of running a business. What is more, it turns out that the entrepreneurs who have gone through the insolvency proceedings (renascent entrepreneurs) acquire more experience, and this can subsequently turn into a success in the case of their return to the market (Stam, Audretsch, Meijaard 2008). The debtor-friendly model also limits the barriers to entry, as potential entrepreneurs are aware of the relatively small burden incurred in case their business fails. Such dependencies are conducive to conducting work on innovations, as it is known that only one of many innovations is successful. On the other hand, any significant discomforts associated with failures limit the tendency to work on innovations.

In the United States, the acceptance of the risk related to the failure of the conducted business is high and this approach has been visible there for many years. A lot of entrepreneurs who made a fortune had gone bankrupt on one of the earlier stages of their career. They include such prominent names as Henry Ford, Donald Trump or Walt Disney (Dunlop). With some exceptions, in Europe the interest in second chance policy was low until recently. It was not until the 21st century that it became a subject of interest, which resulted in the appearance of publications and proposals for changes, especially in the legislation of the European Union and its member countries (A second chance for entrepreneurs 2011; Wymenga et al. 2014).

In this publication, the research objective is to examine the relationships between debtor-friendliness of the bankruptcy law model/its efficiency and entrepreneurship/innovativeness. The hypothesis being verified assumes that the relationships between the aforementioned factors do exist.

The publication, in addition to the introduction, consists of the analysis of literature, the research part and conclusions.

LITERATURE REVIEW

Bankruptcy of entrepreneurs is a mechanism that is permanently inscribed into the functioning of modern economies. Moreover, according to Schumpeter's concept of creative destruction, it is a desirable element (Schumpeter, 2003). The economy is developing through innovation and entrepreneurship, and a bankruptcy mechanism is needed. In a similar tone, Taleb (2012) also proposes its concept of antifragility. In his opinion, stressors are needed in economic life, as they have a positive impact on the development of economies by making entrepreneurs more resilient and antifragile, while the less resilient are removed from the market. Insolvent entities cannot be left alone. Leaving them on the market would generate a lot of negative consequences, i.e. a contagion effect. In addition, it should be borne in mind that entrepreneurs do not operate in a vacuum, and it is often a difficult task to regulate the issue of an insolvent business with its stakeholders on a free-market basis.

In the second half of the twentieth century, the research on the impact of bankruptcy regimes on economic development commenced. The quality of law and its efficiency was becoming a crucial issue as far as adopting insolvency practices in the economy is concerned. Properly set targets in the insolvency procedure, relevant to the needs of the economy, can facilitate business activities, guaranteeing an immediate return of production means in the case of underperformance on the one hand, and favouring actions aimed at debt and corporate restructuring or supporting innovation on the other. The effectiveness of law is a research area closely linked to American legal realism, whereas in European countries the effectiveness of law still fails to be a subject of an in-depth reflection, detailed analysis or cross-disciplinary research. An efficient legal system must work under specific social and economic conditions. It must be remembered that law remains a dead letter if it is not properly applied.

In theory, two major bankruptcy models were formed — the first being creditor-friendly and therefore strict, while the other being debtor-friendly and therefore rehabilitative. There are also mixed models (Bliss 2003; Recasens 2004). However, the most important thing is that bankruptcy proceedings should be relatively cheap and fast. Time-consuming, burdensome and expensive proceedings deter a fresh start through capital destruction. The institution of insolvency has experienced major changes over the course of development of the capitalist system and is, in principle, a derivative of the role of the state in the economy. The bankruptcy law and its practice alone have grown from previous standards. The creditor’s right to compensate was considered a priority for insolvency regulations. In following a debtor-friendly policy, the state may impose specific regulations with this objective and — therefore — shape the way insolvency is evolving, by itself.

So far there have been rather few studies presenting the relationships between bankruptcy models and economic development measured by different factors. For example, Ederer and Manso (2011), as well as Acharya and Subramanian (2009), have shown that systems that are more debtor-friendly, i.e. tolerant of bankruptcy, favour innovation. White’s (2001) study has shown that models characterized by milder treatment of debtors and debt discharge are also characterized by higher levels of entrepreneurship. On the other hand, these models result in lower likelihood of obtaining a business loan (banks tightening the criteria due to the benign treatment of debtors). The relationships between debtor bankruptcy-friendliness and entrepreneurship have also been confirmed by Lee et al. (2011), Armour & Cumming (2008) and Jia (2015)¹. Landier (2005) agrees that the stigma of bankruptcy is one of the key determinants of entrepreneurship. He distinguished two models of bankruptcy, i.e. the conservative and the experimental one. The first one assumes taking a negative stance towards bankruptcy (more severe bankruptcy law for people wanting to re-establish a company), while the latter implies greater tolerance towards bankruptcies and risk in general. The experimental model is suitable for sectors and people who act in an aggressive way, assuming an attitude which is conducive to innovation. The conservative, or more secure pattern is typical of sectors where imitations dominate. This model has a limiting influence on the number of individuals who choose to be entrepreneurs. Due to the high cost of bankruptcy in the conservative model, entrepreneurs choose safer projects than in the case of the experimental one. This issue was developed by Estrin et al. (2017), who showed that only certain elements of bankruptcy-friendly models have a positive effect on entrepreneurship (i.e. debtor in possession, automatic stay). These authors also pointed out that some of the factors that characterize creditor-friendly systems can also have a positive impact on entrepreneurship. Sometimes restrictions on reorganization are positively correlated with high-growth aspiration entrepreneurship. It should also be remembered that protecting creditors may result in higher supply of finance, which in turn can lead to higher entrepreneurship. In addition, Franken (2004) pointed out that the efficiency of bankruptcy models should be analysed together with specific governance characteristics of enterprises. The impact of the efficiency of bankruptcy systems on macroeconomic variables such as the share of investment in GDP or aggregate productivity growth was also investigated by Succurro (2012) and McGowan & Andrews (2016).

RESEARCH METHODOLOGY AND RESULTS

The study aims to verify the hypothesis assuming the existence of the relationship between the debtor-friendliness of bankruptcy law or/and its efficiency and increased tolerance for risk, translating into a higher level of entrepreneurship and innovation. The relationships being analysed are depicted in Fig. 1.

¹ Cumming, Armour and Jia have demonstrated that not only the corporate bankruptcy but also consumer bankruptcy law has an impact on entrepreneurship.

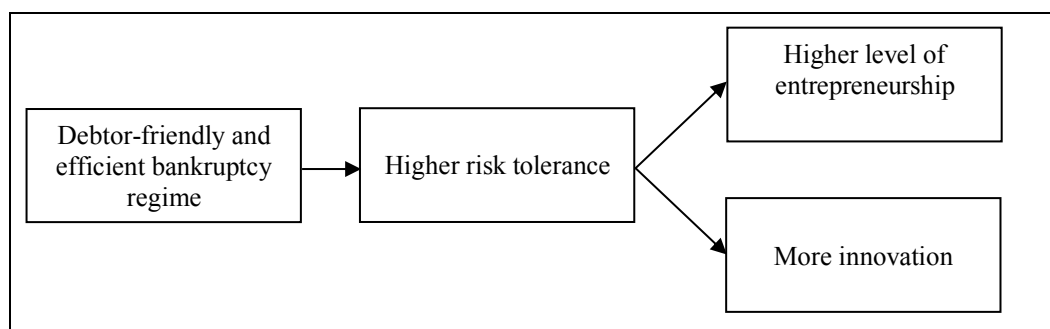


Figure 1: Model of relationships between bankruptcy regime, risk tolerance, entrepreneurship and innovation.

Source: own elaboration.

In order to carry out the study, data from 30 European countries and Turkey were collected. The selection of countries for analysis was dictated by the availability of information. The most up-to-date values of indices reflecting debtor-friendliness of the bankruptcy law model (the ease of second chance indices) came from the year 2014. Therefore, the remaining data were selected with the aim of taking into account the same period or the closest one available. It was impossible to perform a dynamic analysis (e.g. based on time series), as the values of some variables are available only for one period. The description of individual components included in the study of the indices has been omitted in the article but they have been thoroughly characterized in the source materials. Table 1 contains information on the data used, along with the source of their origin.

In order to select the appropriate research method to compare the distributions of the analysed variables, the Shapiro-Wilk normality tests were performed first. There were no grounds to reject the null hypothesis about the normality of distributions² for any of the tested variables apart from the resident applications of innovations per million population (by origin) variable. In order to continue the procedure, this variable was converted to a logarithmic scale, which normalized its distribution³. The cross-sectional ANOVA test was selected as the research method. In order to verify the research hypothesis, the following variables were standardized: ease of second chance, severity of bankruptcy procedures index and resolving insolvency index. In the next step, on the basis of their standardized values, factorization in pairs (debtor-friendliness of bankruptcy law versus its efficiency and debtor-friendliness of bankruptcy law versus risk tolerance) was performed according to the mean (the values standardized below the zero mean were categorized as belonging to the low class, while the remaining ones were treated as belonging to the high class). Such standardization and classification made it possible to analyse the variance of the "risk acceptance" variable in relation to the factor of the (low and high) classes of the above-mentioned bound variables. Finally, two studies were conducted using the classic analysis of variance. In the first study concerning "risk acceptance", values did not differ significantly from the factorized levels of ease of second chance and severity of bankruptcy procedures indices (test statistic $F(3, 27) = 1.5986$, $p = 0.2128$). In the second study, where "risk acceptance" values were compared with the levels of classified "ease of second chance" and "resolving insolvency" variables, the obtained test statistic $F(3, 27) = 15.419$ gave us grounds to reject the null hypothesis assuming the equality of risk acceptance in 4 pairs of factorized levels of variables (low and high).

² The following results of the Shapiro-Wilk tests were obtained: ease of second chance index (SW-W=0.94; p=0.082), severity of bankruptcy procedures index (SW-W=0.957; p=0.2435), resolving insolvency index (SW-W=0.953; p=0.1925), risk acceptance in GEI index (SW-W=0.9658; p=0.41), global entrepreneurship index (SW-W=0.9676; p=0.456), resident applications of innovations per million population (SW-W=0.759; p=0.0001).

³ The results of Shapiro-Wilk tests for logarithms of resident applications of innovations per million population (SW-W=0.9376; p=0.081).

Table 1: Data used in the study

| | Debtor-friendliness of bankruptcy regime | Measure of the efficiency of the bankruptcy system | Measure of the efficiency of the bankruptcy system | Measure of risk tolerance | Measure of entrepreneurship | Measure of innovativeness |
|----------------|---|---|--|---|--|--|
| | <i>Variable X1</i> | <i>Variable X2</i> | <i>Variable X3</i> | <i>Variable X4</i> | <i>Variable X5</i> | <i>Variable X6</i> |
| Countries | <i>Ease of second chance index values from 0 to 7 (the higher the value, the more debtor-friendly the bankruptcy system is)</i> | <i>Severity of bankruptcy procedures composite index values from 0 to 9 (the higher the value, the greater the efficiency of the bankruptcy system)</i> | <i>Resolving Insolvency Index values from 0 to 100 (the higher the value, the greater the efficiency of the bankruptcy system)</i> | <i>Risk Acceptance in GEI values from 0 to 1 (the higher the value, the greater the risk tolerance)</i> | <i>Global Entrepreneurship Index (GEI) values from 0 to 100 (the higher the value, the higher the level of entrepreneurship)</i> | <i>Resident applications of innovations per million population (by origin) (total count by applicant origin)</i> |
| Austria | 3 | 6.7 | 78.84 | 0.7 | 62.9 | 85 |
| Belgium | 4.3 | 4 | 83.87 | 0.58 | 62.1 | 251 |
| Bulgaria | 3.7 | 3.8 | 58.5 | 0.31 | 41.6 | 35 |
| Croatia | 4.7 | 6 | 53.92 | 0.41 | 39.9 | 43 |
| Cyprus | 0.83 | 4 | 53.55 | 0.18 | 41 | 44 |
| Czech Republic | 1.8 | 6 | 75.94 | 0.57 | 44.2 | 102 |
| Denmark | 1.3 | 4.2 | 84.59 | 0.73 | 76 | 595 |
| Estonia | 1.5 | 5.2 | 64.92 | 0.49 | 57.3 | 61 |
| Finland | 2.2 | 5 | 93.85 | 0.74 | 61.8 | 662 |
| France | 3.3 | 4.5 | 75.94 | 0.69 | 66.4 | 379 |
| Germany | 2.2 | 6.5 | 91.78 | 0.64 | 64.6 | 912 |
| Greece | 3 | 5 | 55.98 | 0.18 | 42.1 | 68 |
| Hungary | 3.7 | 5 | 52.91 | 0.5 | 45.1 | 67 |
| Iceland | 3 | 6 | 81.47 | 0.85 | 68.9 | 281 |
| Ireland | 2.7 | 3.5 | 80.03 | 0.69 | 65.6 | 191 |
| Italy | 3.2 | 5 | 75.98 | 0.39 | 41.1 | 201 |
| Latvia | 2.1 | 7 | 63.42 | 0.47 | 53.5 | 56 |
| Lithuania | 3.7 | 3.8 | 48.47 | 0.48 | 54.8 | 50 |
| Luxembourg | 2.5 | 5.8 | 45.58 | 0.47 | 57.2 | 1,053 |
| Montenegro | 3.7 | 2.5 | 68.22 | 0.12 | 37.5 | 21 |
| Netherlands | 2.2 | 5.2 | 83.77 | 0.76 | 65.4 | 543 |
| Norway | 1.8 | 3.5 | 85.62 | 0.89 | 61.1 | 318 |
| Poland | 1.8 | 3.2 | 69.73 | 0.38 | 49.3 | 116 |
| Portugal | 6 | 5.3 | 79.75 | 0.5 | 50 | 80 |
| Romania | 6.5 | 6.3 | 57.14 | 0.29 | 44.9 | 49 |
| Serbia | 1 | 6.7 | 57.9 | 0.16 | 30.9 | 30 |
| Slovakia | 2 | 7 | 69.93 | 0.54 | 46.4 | 44 |
| Spain | 3.5 | 6.2 | 75.89 | 0.64 | 50.2 | 95 |
| Sweden | 2.5 | 6 | 78.43 | 0.76 | 75.9 | 604 |
| Turkey | 3 | 4.5 | 40 | 0.4 | 52.7 | 67 |
| United Kingdom | 3.7 | 6.5 | 82.04 | 0.79 | 67.7 | 308 |
| Data source | Wymenga et al. 2014 - data from the first half of 2014 | Wymenga et al. 2014 - data from the first half of 2014 | Doing Business Report 2015 | Ács et al. 2016 | Ács et al. 2016 | WIPO Statistics Database data for 2014 |

Source: own elaboration based on information obtained from sources indicated in the table.

The results are presented in Fig. 2. Based on them, it can be concluded that in countries with a high level of the ease of second chance and resolving insolvency indices the levels of risk acceptance are high. What is surprising, however, is the fact that in countries with a low level of ease of the second chance index and a high level of the resolving insolvency index, the levels of risk acceptance are also high.

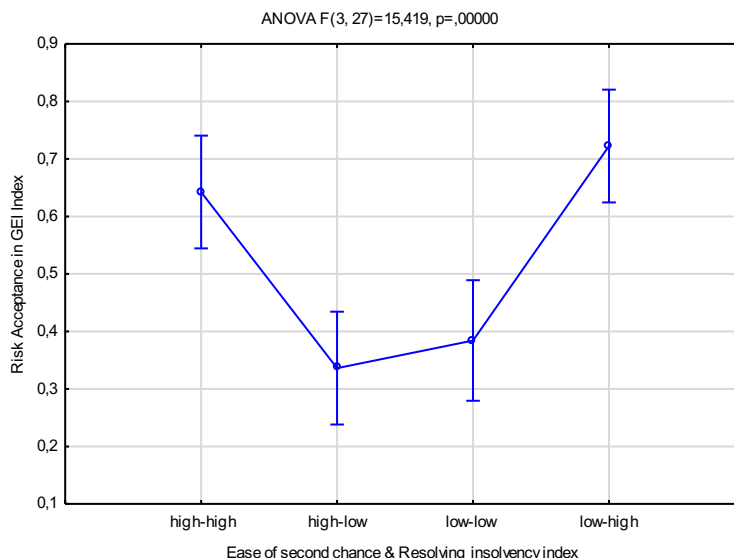


Figure 2: Confidence levels for risk acceptance values vs. classes of combined ease of second chance and resolving insolvency index.

Source: Own calculations performed in Statistica 13.

In the next stage, the second part of the research hypothesis was verified — the mutual interdependence of risk acceptance and the level of entrepreneurship represented by the global entrepreneurship and risk-taking indices vs. logarithmised values of resident applications of innovations per million population. The results of estimation of both regression models using OLS with resistant standard errors are presented in Table 2.

Table 2. Results of estimation of regression functions with risk acceptance as the independent variable.

| Independent / dependent variable | Logarithm of resident applications of innovations per million population | Global entrepreneurship index |
|----------------------------------|--|-------------------------------|
| constant | 1.655 *** (0.201) | 47.764 *** (5.013) |
| Risk acceptance | 1.248 *** (0.115) | 29.017 *** (2.491) |
| R ² | 0.521 | 0.730 |
| Root MSE | 0.341 | 6.242 |

Source: Own calculations performed in Stata 14 (standard errors in brackets).

Note: * p<0.05. ** p<0.01. *** p<0.001.

In both cases, highly statistically significant (p < 0.001) model coefficients were obtained, as well as the high goodness of fit manifested in the level of the coefficient of determination, with the simultaneous low level of the square root of the mean squared error. Based on the obtained results, it can be concluded that with the increase in risk acceptance by 0.1, the logarithm of resident applications of innovations per million population increases by 0.1248 units (i.e. the number of

resident applications of innovations per million population increases by 1.133 units). The second model shows, however, that each increase of the risk acceptance variable by 0.1 is accompanied by the increase of the value of the global entrepreneurship index by 2.9017 units.

CONCLUSIONS

Based on the research, the research hypothesis was confirmed only in part. It appeared that contrary to what was assumed in the hypothesis, debtor-friendliness of the bankruptcy law measured by the ease of second chance index fails to increase the entrepreneurs' tolerance of risk. However, the efficiency of the bankruptcy system measured with the resolving insolvency index does increase entrepreneurs' risk tolerance risk in the countries surveyed, which in turn results in the increase of entrepreneurship and innovativeness.

These results form the basis for conducting in-depth studies on the impact of the bankruptcy system model and its efficiency in European countries on entrepreneurship and innovation. A significant difficulty in their implementation was due to the limited scope of available information. Thus, the nature of the analysis was static, i.e. it was made for one period. While such variables as the efficiency of the bankruptcy system, entrepreneurs' tolerance to risk or the levels of entrepreneurship and innovativeness can be considered relatively stable, the debtor-friendliness of the bankruptcy system and the impact of such system on the above-mentioned determinants tend to have the nature of a process. It should also be borne in mind that in many European countries changes in the construction of bankruptcy law towards a more lenient approach to debtors have been introduced in recent years. However, the effects of these changes are observed with some delay. Therefore, the future research should be extended to include dynamic analysis, if only the relevant data are available.

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Working toward academic and social integration in higher education: where social support and social networks meet

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ABSTRACT

In this paper, we examine academic and social integration as means higher education institutions use to respond to challenges facing them. We analyze how perceptions of social support and loneliness of first year undergraduate students enrolled in a mentoring scheme operating in a peer-to-peer network logic are linked with academic success and a risk of withdrawal.

Findings suggest that dropout intentions are related to experiences of higher Family loneliness and Romantic loneliness. Students who considered withdrawing reported less appraisal support and tangible social support. A perception of academic integration was higher in students with no overdue courses.

Social support appears to be an important element of student integration and academic success. Universities should address students' well-being since their admission with policies that foster student integration and engagement in activities. With coordinated institutional practices students are to feel accompanied, less lonely and more successful in long term.

Keywords: *academic and social integration, social support, mentoring, loneliness, dropout*

INTRODUCTION

Universities nowadays operate in a different reality as compared to some decades ago. Implementing mentoring programs is frequently driven by the need to redesign strategic orientation of higher education institutions because of demographic moves and social change we have been witnessing. Students' pathways are complex what turns their integration at the institution challenging. Academic and social integration is vital for students and for institutions as individuals integrated in their community identify with their university, engage and get involved in curricular and extracurricular activities, and with peers.

We accompany this tendency from the perspective of a mentoring program aimed to facilitate integration in academia and designed in a network structure. We report on social support and loneliness experiences of first year undergraduate program students as a way to examine their academic and social integration in the institution.

BACKGROUND OF THE STUDY

Higher education has gone a long way to its current shape and structure. In part, due to broad and deep changes affecting the economy and the society. Professions become increasingly dependent on

knowledge acquisition. Not without importance is the ability to adapt to new realities with a need of lifelong learning, something we are now very much aware of.

In educational pathway, transition from the secondary education to the academia is a remarkable moment that brings to a lower or higher extent changes into the young person's life but also carries some level of stress. A successful transition of the student is a success of the institution translated into measurable indicators: dropout rate, retention rate, completion rate, or time-to-degree. Universities seek ways to keep these indicators as positive as possible.

Mentoring schemes

Application of mentoring programs in a range of business areas has been seen as means to knowledge transfer and institutional alignment. A presence of a more experienced colleague can be beneficial for both, newly recruited individual and the company, providing to the first expertise, counselling and support. It is deemed successful mentoring can enhance trust, engagement, and accelerate work performance (Billett, 2001). Higgins and Kram (2001) added interesting insights into the mentoring concept from a developmental network perspective.

Mentoring schemes have also found their application in the academy, in different contexts and settings (Berman, Rosenthal, Curry, Evans, & Gusberg, 2008; Schmidt, Marks, & Derrico, 2007). The idea builds on providing broad support to the first year students and facilitating their integration with the academic community. Evidence from higher education points into formal and informal models with a number of configurations involving students, mentors and institutional structures. One of such mentoring schemes is that developed at the University of Aveiro promoting a smooth transition from the secondary education and student integration into academia through an informal peer-to-peer model based on one tutor (lecturer) per course and a group of mentors (older peers) (Teixeira, Szczygiel, Alves, & Lima, 2014).

Mentees in mentoring schemes perform particularly better if they are supported by older colleagues whose empathy, understanding of the difficulties they are facing and actual support are vital (OECD, 2016). The experience of the first year of study is to create student bonding with the institution and to stimulate a sense of belonging (Araújo, et al. (2014). Transition from the first to the second year of study has been shown to be essential in educational pathway in later stages (Vossensteyn, Kottmann, Jongbloed, Kaiser, & Cremonini, 2015). Hence, with efforts toward academic and social integration, institutions address student retention and dropout rates. Student withdrawal is a particularly difficult issue in higher education. Cross-country reports assuring a common methodological basis are still sporadic. Concrete evidence specifically indicating a dropout statistic suggests about 31% of students leaving tertiary education without qualifications (OECD, 2010). Another larger report is from PIAAC (OECD Programme for the International Assessment of Adult Competencies), albeit it is based on self-reported information and not comprising all OECD countries. The PIAAC study reports the highest withdrawal rates in Italy (34.1%), the Netherlands (28.3%) and in the Czech Republic (27.8%) (Schnepf, 2014). On individual level for example, the study of Paura and Arhipova (2014) conducted in five Latvian faculties has showed a dropout of 23.2% in months 1-6 and 11.2% in months 7-12 of the first year of study resulting in a substantial number of students who left during the first academic year.

Integration and inclusion promoted by mentoring schemes makes students feel more engaged and less lonely contributing to the decrease of dropout indicators (OECD, 2016). Loneliness is an unpleasant emotional response to a perceived structure and quality of a person's social network. It means that somebody not necessarily is alone, but feels alone (Weiss, 1973). People with poor social connections and experiencing social isolation, but also those with good social environment, but not entirely accepted by the members of their network can all experience loneliness.

Social support and social networks

Social support is a perception people are cared for and accepted as part of social group or community on which they can count in adverse life situations. The individual perceives physical and emotional comfort and practical assistance they believe is available to them. Perhaps one of the most complete definitions of social support comes from Lin, Dean and Ensel (1986) and indicates support from social networks, close friends and from the community, the one that is real and that is perceived.

Despite grounded in different approaches, the most commonly used typologies of social support consistently apply components related to physical and mental health (Sarason, Sarason, & Gurung, 2001). At least three common elements are present, although sometimes designated by different terms: emotional support, informational support and tangible aid. Emotional support relates to comprehension, transmission of affection, caring and assurance. Informational support is an ability to provide opinion, advice or guidance on a matter in which a subject is not familiar with. Tangible support focuses on material, instrumental aid and services.

Literature provides a rich and stimulating discussion on what constitutes the core of social support. Dean, Kolody, Wood and Ensel (1989) propose four dimensions of expressive support: caring and concern, social integration, love and affection, and the instrumental dimension. Stevens et al. (2013) in their study on the influence of social support on mental health on caregivers in Latin America context refer to appraisal, belonging and tangibility. Cutrona's (1990) widely cited typology indicates emotional support, informational support, tangible aid, esteem support and network support. In Tardy's (1985) understanding five components of social support co-exist and correlate: network (type of group of support), direction (given or received), disposition (accessible or enacted), content (instrumental, informational, emotional or appraisal) and description/assessment (described or assessed in some manner). Sherbourne and Stewart (1991) sustain a five-component concept, in which social support comprises affectionate, tangible, positive social interaction and emotional/informational dimensions, considering the latter, interestingly, one unique type. Laireiter and Baumann (1992) hold the idea of five elements specifying actual support, perceived support, support networks, supportive environment and the context where it occurs.

A substantial body of research on social support and social networks tends to integrate the two concepts emphasizing usually one of them. Another group of academics supports the interchangeable approach to the subject.

A social network construct springs from an individual's social environment and is used to study relationships between individuals, organizations and communities. It arose from the idea that we could often explain behavior by examining individual interactions (Milroy & Margrain, 1980). Mitchell (1969) describes a social network as “a set of linkages among persons in which the characteristics of the linkages are useful for understanding the behavior of the persons involved” (p. 2). Another widely cited definition is that of Walker, MacBride and Vachon (1977) who explain social network as “that set of personal contacts through which the individual maintains his social identity and receives emotional support, material aid, services, information and new social contacts” (p. 35). The work of Boissevain (1974) emphasizes the importance of relationships in people's life and well-being. Among different relationships, which number and character naturally changes over the lifespan, and that can result in closer or looser bonding, Boissevain (1974) shows that ties that are more intimate are indeed vital, however, relationships not characterized by a high degree of intimacy have an impact on people's behavior and choices. We can observe this for example in social network sites, of which most apparent group of users are younger people and who nowadays are dealing with their networks of usually large size and weak ties (Ellison, Lampe, & Steinfield, 2009).

METHODS

We included first year undergraduate Business and Administration program students, who had been offered the mentoring scheme at the beginning of the academic year.

Procedures

Students received a sheet with socioeconomic information, generic questions regarding their academic and social integration in the institution, academic performance, and perceptions of the assistance of the mentor. They also received standardized measures evaluating social support and loneliness.

Measures

The SELSA-S is a reduced, 15-item instrument developed by DiTommaso, Brannen, and Best (2004) as means to evaluate loneliness. Loneliness is seen in Family, Romantic and Social dimensions. Items are rated on a 7-point Likert scale from (1) “strongly disagree” to (7) “strongly agree”. The Portuguese version of SELSA-S validated through two studies in which one in higher education students was developed by Fernandes and Neto (2009) and preserves the psychometric properties of the original scale.

The ISEL-12 is a reduced version of the Interpersonal Support Evaluation List, an instrument measuring perceptions of social support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). Each of the three dimensions of the measure: tangible support, belonging support and appraisal support, are rated 4-point scale ranging from “Definitely false” to “Definitely true”.

Data analysis

Statistical analysis was performed with IBM SPSS Statistics 22.0. Descriptive statistics are presented as means (M) and standard deviations (SD) for symmetrical variables and medians (Mdn) and percentiles P25 and P75, otherwise. For categorical variables, we present frequencies (n) and percentages (%).

Before computing the SELSA-S and ISEL-12 subscales, items were recoded according to the authors’ instructions. Each of the SELSA-S subscales range from a possible minimum of 7 to a maximum of 35 points. The dimensions of the ISEL-12 range from a possible minimum of 4 to a maximum of 16 points. After examining all distributions, we decided to use non-parametric tests. Significant results were considered for $p < .05$ or $p < .10$ as marginally significant.

RESULTS

From 47 students included into the mentoring program, we inquired 42 (response rate=89.36%), of which 61.9% were female, 69.0% were admitted at the first stage and 59.5% had previous knowledge of the university. The age ranged from 18 to 37 years old (M=19.24, SD=3.12).

More than a half of the students (57.1%) live in Aveiro during the academic year and 64.3% (n=27) do not receive any allowance. Half of the respondents have been engaged in extracurricular activities, 6 (14.3%) reported to not have succeeded with at least one course. Withdrawing was at some point under consideration of 10 students (23.8%). Regarding their academic integration at the institution, the students said they felt integrated (n=15, 35.7%) and fully integrated (n=13, 31.0%). A perception of the social dimension of integration was also optimistic, 47.6% (n=20) felt integrated and 23.8% (n=10) fully integrated.

The students have used personal contacts, telephone and Facebook to connect with their mentor. Facebook is clearly the preferable way of communication (n=33, 78.6%). The frequency of communication has varied, with weekly (n=13, 31.0%), monthly (n=12, 28.6%) and seldom (n=13, 31.0%) contacts being the most often reported. The mentor has almost always been found at the university (n=355, 83.3%).

Students' perceptions of academic ($r_s = -.520$, $p < .001$) and social integration ($r_s = -.595$, $p < .001$) were found to be negatively correlated with the SELSA-S Social loneliness. On the other hand, they were positively correlated with the ISEL-12 belonging dimension, $r_s = .317$, $p = .041$ and $r_s = .402$, $p = .008$, respectively.

We found marginally significant results ($p = .095$) when comparing students' perception of academic integration with academic performance. Higher results were found for students with no overdue courses (Mdn=4.0 vs Mdn=3.0). Students who admitted to have considered withdrawing were found to have higher scores on the SELSA-S Family loneliness subscale (Mdn=12.0) than those who have not (Mdn=5.0; $p = .055$). The results on the Romantic loneliness subscale were similar ($p = .085$), with higher scores for respondents who have considered giving up (Mdn=23.5 vs. Mdn=18.0). Students living in Aveiro during the study period ($p = .069$) and those receiving an allowance ($p = 0.023$) reported significantly higher levels on the Family loneliness.

In social support, we found significant results in the ISEL-12 appraisal ($p = 0.006$) and tangible ($p = 0.094$) support with students who thought over withdrawing experiencing lower social support than those who did not consider leaving the university. Results in the belonging dimension were not statistically significant.

The mentor's assistance in their capacity to make the younger's student feel comfortable and at ease was negatively associated with the experiences of Social loneliness ($r_s = -.365$, $p = .017$). A positive association was found between the ISEL-12 tangible subscale and reliance and confidence in the mentor ($r_s = .315$, $p = .042$).

The SELSA-S Social loneliness was negatively correlated with the ISEL-12 appraisal ($r_s = -.362$, $p < .05$) and belonging ($r_s = -.428$, $p < .01$) dimensions. In addition, a negative correlation was found between the SELSA-S Romantic loneliness and the ISEL-12 appraisal dimension ($r_s = .502$, $p < .001$).

DISCUSSION AND CONCLUSION

Transition from the secondary education is a big step for young people and their families. It brings considerable changes in their lifestyle obliging them to adopt new social and study patterns. For the family, it commonly means a substantial financial effort. It all goes together with emotional weight. An effective transition is important for students for their academic success and general well-being yet, few can probably recall a smooth quick adaptation as up to 75% of first year students experience social difficulties and acute loneliness within the first two weeks of class (Buote, et al. 2007). It is also vital for higher education institutions that struggle to attract candidates and keep the university grow when accompanying rapid socioeconomic and cultural shifts. A fully integrated student recognizes institutional identity, creates bonding and builds emotional ties, and is less likely to withdraw. In that sense, academic success begins with integration and inclusion into academic community, and retention is as important as access. Mentoring schemes are one of the ways universities approach students' integration in order to build strategies for early problem detection and addressing academic performance, comfort and happiness. They are frequently built on a network structure.

Our study aimed to approach the academic and social integration phenomenon and examine the patterns of social support. The subjects were first year undergraduate students who were enrolled into a mentoring scheme designed in a network structure. We wanted to analyze how academic success and a risk of withdrawal links with students' perceptions of social support and loneliness they faced. We found that students who had dropout intentions experienced more Family loneliness and Romantic loneliness and reported less appraisal and tangible social support. These results are sustained by higher scores on the Family loneliness among students living in Aveiro during the academic year and receiving an allowance. These results could be explained by the physical and emotional distance from the family or the romantic partner that can be difficult to deal with especially in the first phase of separation. Students eligible for an allowance for economic reasons could in fact feel they received less tangible social support and could feel less secure about the future and ability to pay the fees. The overall perception of academic integration was better in students who did not represent serious academic difficulties and did not have overdue courses. Love (2008) has also supported that loneliness is related with college dropout. Fall and Roberts (2012) have studied interactions between a wider social context, student engagement and dropout. They have found that perceived social support from closer family members (parents) and institutional representatives (teachers) predicts students' self-perceptions (perception of control and identification with the institution), which consecutively predict students' engagement and academic success. De la Iglesia, Stover and Liporace (2014) have studied perceived social support and academic performance in Argentinian college students and found that perception of better social support was associated with better academic achievement in female students. On the other hand, we did not identify differences in perceived social support and loneliness experiences between genders what is interesting as there is evidence that women have more positive perceptions of social support and have larger social networks than men (Nicpon, et al., 2006), but studies are not conclusive in this matter.

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Unemployment of the people aged 50+ in European Union member states in conditions of population ageing – selected problems

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ABSTRACT

The goal of the paper is to identify unemployment structure (and economic inactivity) in 50+ age group while considering diversification in selected group of European Union member states. The time range of the analysis includes the years between 2004 and 2016. The simple statistical methods such as measures of change rates and Pearson's linear correlation coefficient have been used in the paper. The process of permanent shrinking of labour resources and changes occurring in their structure (for example ageing) are the result of demographic transformations in the EU-28. Estimated Pearson correlation coefficient (r_{xy}), in the group of EU-28 states, between the general unemployment rate (15-64 years) and the unemployment rate of people aged 50-64 showed correlation of almost linear nature (0.985). There is a statistical, negative relationship between the level of education of elderly people aged 50-64, and unemployment rate in this age category.

Keywords: *unemployment of the elderly, ageing population, inactivity of the elderly.*

INTRODUCTION

Dynamics of growth of labour shortage in European Union member states is the source of negative trends in labour markets in a long term. Negative scenarios, for example significant decline in real labour resources can already be observed in short time. The processes of population ageing, negative birth-rate predominant in many EU countries, and insufficient rates of elderly people continuing or taking employment after acquisition of the right to old-age pension are the sources of these problems independently of the analysed period. Although the situation of the EU member states with this respect is diversified, the problem of population ageing concerns the whole European Union. The need to analyse unemployment rates in 50+ age group, as well as indication of selected issues related to the policy of elderly people activation is emerging against the background of these processes. The goal of the paper is to identify unemployment structure and economic inactivity in 50+ age group while considering (their) diversification in selected group of European Union member states. The time range of the analysis includes the years between 2004 and 2016.

ACTIVE POPULATION AGEING AS A STRATEGIC GOAL OF THE EUROPEAN UNION

The last decade of the 20th century and the first decade of the 21st century revealed significant demographic changes in Europe that are characterised by rapid decline in demographic dynamics in many countries of the European Union (Hrynkiewicz & Potrykowska, 2016; Sojka, 2015; Meiler-Rodriguez et al., 2013; Steil et al., 2013; Żołędowski, 2017; Prognoza ludności w Unii Europejskiej 2008–2060 [*Projection of the population in the European Union 2008 – 2060*], 2008). The process of continuous shrinking of labour resources and also changes in their structure, especially ageing is the result of demographic transformations. The processes of ageing constitute one of the most important long-term determinants of economic development in all European Union member states (Nowak-Far, 2011; Meiler-Rodriguez et al., 2013; EUROPOP2008 convergence scenario; The 2012

Ageing Report, 2012; Sytuacja demograficzna Polski na tle Europy [*Demographic situation of Poland as compared to Europe*], 2017).

In Europe 2020 strategy the goal concerning poverty reduction and social exclusion among the European Union population was formulated (Europe 2020, 2010; Schimanek, 2006; Meiler-Rodriguez et al., 2013). Operationalisation of this goal represents inclusion of the entire EU population, i.e. also elderly people among others. The decline in unemployment rate of the people in 50+ age group is correlated with the growth of employment rate in this age group and/or with the increase in the number of people economically inactive. The general goal of increase in occupational activity of European Union population is implemented especially through providing support for males and females aged between 55 and 64 (Haan & Steiner, 2008).

Implementation of sub-goals of Europe 2020 strategy is somehow threatened by the problem of competitiveness existing between them. The decline in unemployment rate among elderly people through the aforementioned growth in their economic activity and labour intensity in households among others, may bring threat to implementation of employment goal with reference to young people. Data show that in majority of EU member states (19 countries in total), especially in Italy, Spain, Ireland and Holland, increase in employment among elderly people between 2006 and 2015 was correlated with the decline in employment rate among young people (Smarter, greener, more inclusive?, 2016).

Literature shows a catalogue of reasons for low economic activity of elderly people, i.e. those aged 50+ (Schimanek, 2006):

- difficult situation on labour market and high unemployment;
- difficult conditions of management and high labour costs that make the dynamics of creation of new workplaces insufficient; the employers look for cheap workers, and they are mainly young people;
- dynamic development of high technology that results in the fact that employers often make people aged over 50 redundant as they do not follow its development;
- universal stereotypes about elderly people discourage employers to offer employment to people aged over 50. In the light of these stereotypes, elderly people are primarily less flexible, are sick more often and are less willing to participate in trainings, improve their qualifications, learn foreign languages, get to know innovative technologies, etc.;
- sometimes unconscious policy of the state pushes out elderly people from labour market, mainly by means of the system of social security;
- period of protection before the notice of termination of employment of workers who are less than four years before reaching the age of acquisition of pension rights. Statutory expansion of this period, for example from two to four years, ironically makes the situation of elderly people on labour market worse. Employers do not want to offer employment to people who have reached or will soon have reached the protection period because then they might not be able to make them redundant for as long as four years (the case of Poland).

In Schimanek is stated that maintaining employment of elderly people does not bring liquidation of workplaces for young people, also including those who enter the labour market for the first time (Schimanek, 2006). According to arguments presented in this paper, while occupying specific positions, people aged over 50 do not form the source of competition for young people because of the scope of knowledge and professional experience required in these positions, which young people do not have yet. Experiences of EU member states, mainly of Western Europe show that "maintaining high economic activity of elderly people reduces the load on state budget resulting from social benefits", and consequently provides sources for financing of creation of new workplaces for young people (Schimanek, 2006; Kyyra & Wilke, 2007).

In 2011, within international project of regular public opinion survey, implemented at request of the European Union under the name “Eurobarometer”, data concerning declared age of finishing the economic activity in Poland and European Union was obtained (Aktywne starzenie się [Active ageing], 2017) (see table 1).

Table 1. Declared maximum age until which the workers could perform professional duties in the last occupied position

| Average | EU-27 | Poland |
|--------------------------|-------|--------|
| Total | 61.7 | 58.6 |
| By performed work | | |
| Freelancers | 64.9 | 60.7 |
| Managers | 63.2 | 60 |
| White-collar workers | 61.8 | 56.4 |
| Manual workers | 59.9 | 58.4 |

Employed Poles, most often declare that they would be able to do their work until the age of 58.6. Results obtained for the entire European Union show that the average age of finishing professional career indicated by European respondents is 61 (see table 1). The survey shows that freelancers are the people who finish their professional career the latest (the age declared in Poland is over 60 and in EU almost 65 years). In the European Union Manual workers are going to work for the shortest time (until aged 59.9), whereas in Poland, they are white-collar workers who are not managers (56.4 years) (Kwinta-Odrzywołek, 2017). Declarations of Polish people seem to be reliable. They are not significantly different from real data collected, processed and presented by Zakład Ubezpieczeń Społecznych [Social Insurance Institution]. According to the data, the average age of retirement in Poland in 2011 was 59.5, and for men 60.1 years (Kwinta-Odrzywołek, 2017). In 2015 it was less than 61 years in the case of women, and around 63 years in the case of men (Szukalski, 2016).

UNEMPLOYMENT AS A VARIABLE OF PROFESSIONAL ACTIVITY OF PEOPLE AGED 50+

Professional activity of the people is especially determined by two quantitative variables, i.e. the level of unemployment rate and the level of employment in economy. Growth of both these measures proves growing professional activity. Between 2004 and 2016 in the whole EU-28 a mean annual growth of professionally active population (both women and men) by less than 0.5% was observed (see tab. 2). The pace of growth of women’s activity was larger than in the group of men, i.e. 0.78% in comparison with 0.25% which contributed to slight, but noticeable change in the structure of occupationally active population. The rate of professionally active men decreased in the studied period, whereas it grew in the population of women (see tab. 2). At the same time, between 2004 and 2016 in the EU-28 the rate of occupationally inactive population aged 15-64 decreased. Mean annual pace of decline was over 1.0% (0.6% for men and 1.3% for women). Even higher decline was observed among the population of elderly people (aged 50-64); mean annual pace of decline of professionally inactive people was over 2.6% (2.58% for men and 2.71% for women). Total decline between 2004 and 2016 was over 27%. As a result, the question arises of how the unemployment rate shaped for population aged 50-64, and whether the trends of its changes explain the differences in the pace of decline of professional inactivity presented above.

In the fourth quarter of 2016, unemployment rate in 28 EU states (for people aged 15-64) was 8.4% in comparison with 5.6% in Poland. Between 2004 and 2006, Poland was the state of the highest rate of unemployment in the European Union. At the end of 2016, unemployment rate in Poland was on the lower level than the average reported in EU-28. Unemployment rate of the population

aged 50-64 in Poland was also lower than the average reported in EU-28, and it was 4.2% in comparison with 6.3% in EU-28. Unemployment rates of elderly people, higher than in Poland, were reported in 20 countries of the European Union. The rate that was lower than in Poland was observed in the Czech Republic (3.1%), Great Britain (3.2%), Romania (3.4%), Denmark (3.5%), Germany (3.5%) and in Hungary (4.0%). In Luxembourg, unemployment rate of the population aged 50+ was on the same level as in Poland (4.2%) (*Osoby powyżej 50 roku życia na rynku pracy w 2016 roku*, [*People aged over 50 on labour market*] 2017).

Table 2: Activity of EU-28 population – percentage distribution by sex (15-64 years)

| Sex/Time | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Males | 0.554 | 0.552 | 0.551 | 0.550 | 0.548 | 0.546 | 0.545 | 0.543 | 0.541 | 0.540 | 0.539 | 0.538 | 0.538 |
| Females | 0.446 | 0.448 | 0.449 | 0.450 | 0.452 | 0.454 | 0.455 | 0.457 | 0.459 | 0.460 | 0.461 | 0.462 | 0.462 |

According to data in figure 1, the dynamics of changes in unemployment rate among elderly people in EU countries is significantly diversified (see fig. 1). The situation of elderly people on labour market is remarkably correlated with the general situation on labour market in a given national economy. Estimated Pearson correlation coefficient (r_{xy}), in the group of EU-28 states, between the general unemployment rate (15-64 years) and the unemployment rate of people aged 50-64 showed correlation of almost linear nature (0.985). As a result, in the states most affected by financial crisis after 2008, the largest dynamics of growth of unemployed people aged 50-64 was observed. This group mainly includes Greece, Spain, Cyprus, Portugal and Ireland. Pearson linear correlation coefficient between changes in unemployment rate (in 50-64 age group) and changes in the rate of people who do not look for employment (occupationally inactive) because of retirement did not confirm correlation between these variables ($r_{xy}=0.250$). The hypothesis of increased stream of people who retire (professionally inactive) because of deteriorating situation on labour market was the basis for these estimates. In the studied group of states examples of those that confirm the hypothesis can be indicated (for example Greece, Spain, Luxembourg) as well as those that falsify it (Cyprus, Portugal, Ireland) (<http://ec.europa.eu/eurostat/data/database>).

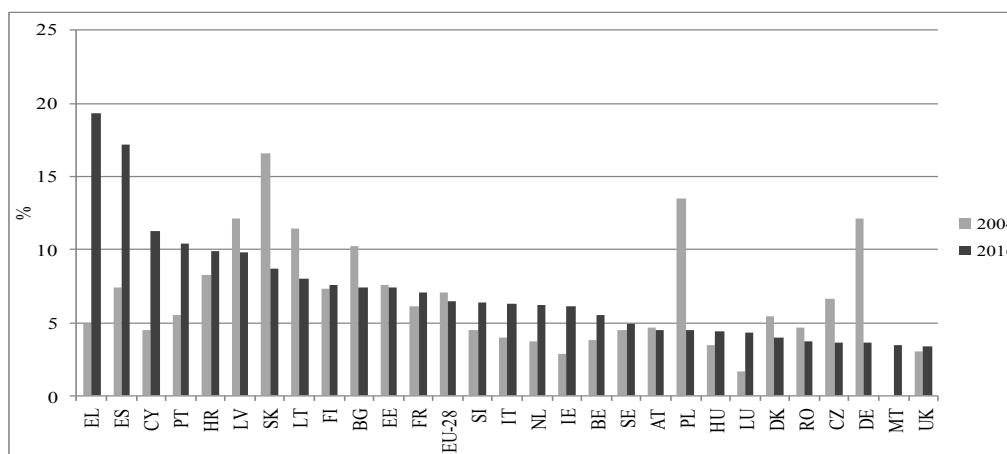


Figure 1: Changes in unemployment rate in the EU-28 (50-64 years)

Considering positive changes on labour market of people aged 50-64, especially after 2008, Germany and Poland were the leaders. In the case of both states, declines in unemployment rates in

populations of elderly people were the largest and at the same time they reported a decline in the rate of people who do not look for employment (professionally inactive) because of retirement.

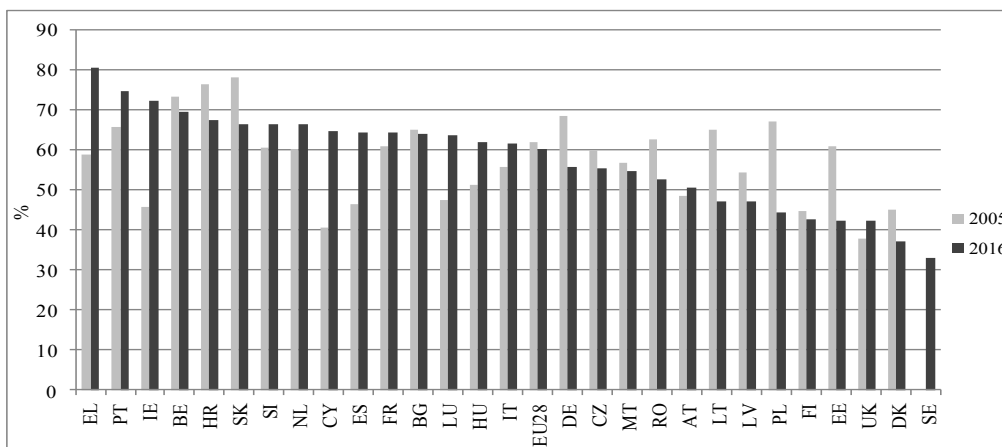


Figure 2: Long-term unemployment (50-64 years) as a percentage of the total unemployment in the EU-28

There is a statistical, negative relationship between the level of education of elderly people aged 50-64, and unemployment rate in this age category. The higher the level of education that elderly people have, the less the probability of being unemployed. This correlation also concerns the states most affected by results of financial crisis after 2008, such as Greece, Spain, Portugal and Ireland. In 2016 in EU-28 unemployment rate among elderly people who did not have elementary education or having elementary or junior-high school education was 12.1%. In the population of elderly people having secondary or post-secondary education, unemployment rate was on the level of 5.4%, whereas among people having university education it was 3.6%. In each of indicated education categories, in female population aged 50-64 slightly lower unemployment rates were reported in comparison with the male population (<http://ec.europa.eu/eurostat/data/database>).

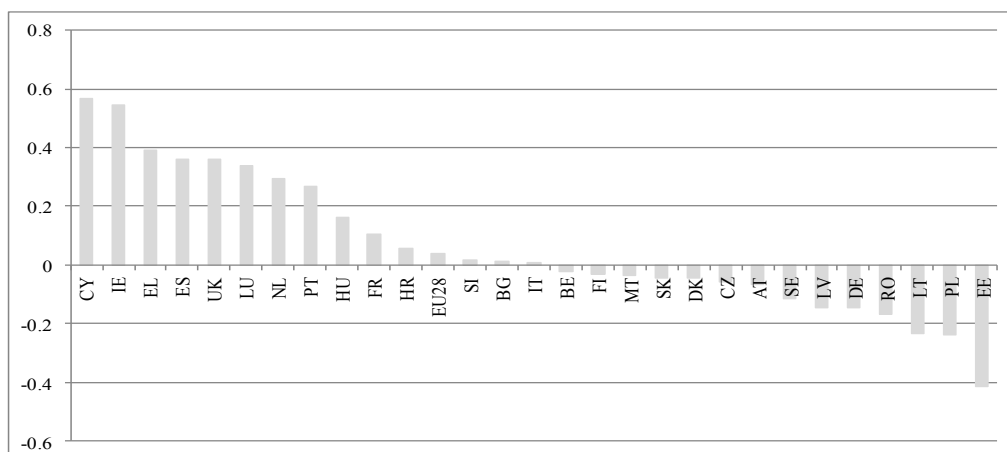


Figure 3: Dynamics of long-term unemployment among elderly in the EU-28 (2004-2016)

Between 2004 and 2016, the growth of long-term unemployment rate of people aged 50-64 was positively correlated with the growth of long-term unemployment in population aged 15-64. Statistics show that elderly people are more at risk of long-term unemployment in comparison with people aged 15-64. The rate of people aged 50-64, unemployed for a long term, is clearly higher than in the population aged 15-64 (in 2016, 60.3% and 45.8% respectively). The trend and scale of changes in long-term unemployment in EU-28 member states between 2004-2016 is diversified (see fig. 2 and fig. 3). The highest growth of long-term unemployment was observed especially in the countries in which the dynamics of growth of total unemployment rate in 50-64 age group was relatively high, i.e. in Cyprus, Ireland, Greece, Spain, Portugal as well as in Luxembourg, Holland and Great Britain (see fig. 1 and fig. 3).

The greatest declines of the rate of elderly people unemployed for a long term were observed in the countries of Central-Eastern Europe, especially in Estonia, Poland, Lithuania and Romania. A significant decrease was also reported in Germany. It seems that in the case of the states located in Central-Eastern Europe, the negative dynamics of long-term unemployment of elderly people (and the total unemployment rate) can be explained by two processes, i.e. emigration streams of population of these countries and shortages of labour resources in many professions and specialities, revealed as a result of emigration and relatively high economic growth, among others. Shortages in labour resources, especially observed on the stage of economic recovery are a result of the process of population ageing among others.

CONCLUSIONS

Presented theoretical and statistical material allowed for formulation of several important conclusions concerning the research issue. The process of permanent shrinking of labour resources and changes occurring in their structure (for example ageing) are the result of demographic transformations in the EU-28. Both these features have the nature of labour market destimulants. The first constitutes a significant barrier, and at the same time threat to potential path of economic growth in all European Union labour states. Shrinking of labour resources in quantitative terms causes permanent payroll pressure on the labour market and the necessity of workers' import. The other destimulant has qualitative nature. The results of its changes will probably include decline in labour productivity in the future. High dynamics of population ageing in individual European Union member states causes a series of problems and challenges for employment policies and labour market in the EU. Although the situation of EU member states in this regard is diversified, the problem of population ageing concerns the whole European Union.

Considering the above facts, the observed long-term trend of decline in professional inactivity in the population aged 50-64 should be positively assessed. In the period of shrinking labour resources, activation of elderly people can contribute to decrease of severity of economic effects that are a derivative of population ageing. The countries that reported the decline in the rate of people aged 50-64 who do not look for employment (professionally inactive) because of retirement, and decline in unemployment in this age group, have become the leaders in the EU-28 with respect to positive changes on labour market. The level of education is one of the key determinants of professional activity of elderly people. People having higher education constitute the smallest rate among the unemployed.

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The use of the Internet in households of the European Union countries

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ABSTRACT

Information and Communication Technologies (ICT) are nowadays indispensable and obligatory tools to be used in every household. The examination of the use of ICT in households is considered to be a significant element for the observation of information society and economic development based on knowledge. In the Europe 2020 Strategy, it was specified that common access to digital goods is a priority in order to support the economic and social development of the country and to minimize the phenomenon of digital exclusion. The current study aims mainly at the evaluation of Poland's status, in comparison to the EU countries, on the basis of chosen indicators which describe the Internet access and the use of this communication medium in households. In the research multidimensional comparable analysis was used. Another aim of the present analysis is to demonstrate that a very particular group of people who use ICT intensively, especially the devices with the Internet access, are young people. Easy Web access and the wide range of services offered may have a significance influence on problematic Internet use as well as excessive implementation of some Internet activities by young people. All of the EU countries were subjected to research in 2017. Moreover, the author's own research results from 2015-2016 were also taken into consideration as well.

Keywords: households, problematic Internet use, multidimensional analysis.

INTRODUCTION

The devices and Information and Communication Technologies (ICT) which include among others: the Internet, wireless networks, mobile telephony, communication means and technologies of all kinds enabling processing, gathering and transfer of the electronic data are nowadays indispensable and obligatory tools in households. Computers, tablet computers, mobile phones (especially smartphones with Internet access) have become a significant tool to obtain information, to learn, work or entertain. These devices are used to fulfill social and economic human needs: starting from e-entertainment, through e-education, online-shopping and banking to using online public services (e-administration, e-health). However, apart from having many advantages, the development of more attractive network services can entail a possibility of misuse and even facilitate criminal activities through electronic means such as cyberbullying (Pyżalski, 2009) while excessive and improper Internet or mobile phone use may lead to misuse or addiction (Jarczyńska, 2015).

The examination of Information and Communication Technologies in households is considered to be a significant element of the observation of information society and economic development based on knowledge. According to Digital Agenda, which is one of the seven pillars prepared by European Commission in Europe 2020 Strategy, the common access to digital goods is the priority addressed to support the economic and social development of the country and to minimize the phenomenon of digital exclusion. The development of the information society influences the shaping of three dimensions that form the basis for sustainable development: economic order, ecological order and social order (Szkudlarek, 2014). Access to the ICT infrastructure and the increase of the ability to use ICT in households, enterprises or state institutions are more likely to implement the concept of sustainable development.

The current paper addresses predominantly the evaluation of Poland's status, as compared to the other EU countries, on the basis of chosen indicators describing Internet access and the use of this communication medium in households. The answers to the following questions were investigated: What is the Polish status in relation to the Internet use in households?; Are the other EU countries similar in terms of the analysed indicators of the Internet access and its use? If yes, what similar country clusters could they be divided into? Another objective of this study is to demonstrate that it is mostly young people who use Information and Communication Technologies (ICT) intensively and specifically the devices with the Internet access. Easy Web access and the wide range of offered services may trigger the problematic Internet use and escalate unhealthy obsession with computer games or social media. All of the EU countries were subjected to research in 2017 when the most recent statistical data became available. It included the author's own research results from 2015-2016 were taken into consideration as well.

METHODS, SELECTION OF VARIABLES AND RESULTS OF RESEARCH ON THE INTERNET USAGE IN HOUSEHOLDS

The described phenomenon is of complex nature and it is multifaceted. This is why the multidimensional comparable analysis was implemented to conduct the research. Hellwig's taxonomic measure of development was used in the research - it helped to put targetted objects in linear order (create countries rank) in terms of having and using the Internet in households (the description of method in, among others: Szkutnik et al., 2015; Mościbrodzka, 2014). The synthetic taxonomic measure of development is based on the Euclidean distance and is standardized, meaning, it takes values within the range [0,1]. The smaller the difference of measure value from 1, the more developed the specific object is as regards the level of multi-feature phenomenon, in other words, the more approximate to standard object. The development pattern is an abstract point with standardized coordinates, the coordinates of this point are the most favorable values of diagnostic variables. To determine groups of countries similar in terms of diagnostic features describing the analyzed phenomenon, one of the agglomerational hierarchical methods -was used - the Ward method, where the set of objects is divided into k groups (clusters) based on the dendrogram. The Euclidean distance was taken as unit of distance (in the research, the EU countries were divided into 4 aggregations, meaning disjoint and nonempty subsets called classes due to the similarity of having and using the Internet – on the basis of the Mojena's stopping rule (Mojena & Wishart, 1980).

The final diagnostic variables describing the use of the Internet by households are presented in Table 1 together with the division of those variables into Stimulants (S) and Destimulants (D) and chosen statistic characteristics. In the research only the variables describing the studied phenomenon were accepted, with suitably high variability (the variability coefficient (V) above 10%) and those insignificantly correlated with each other (the correlation coefficient below 0.5).

It results from the data in Table 1 that the EU countries differ the most in terms of the percentage of Internet users who subscribe various forms of videos; the percentage of Internet users who send online forms to public institutions; the percentage of Internet users who use online banking; the percentage of ICT specialists in employment in total and the graduates of scientific and technical studies per 1000 people aged 20-29. Among the examined European countries, the highest percentage of households with broadband Internet access could be noted in 2017 in Luxembourg (95.7%) - the indicator here was higher than indicator in the European Union by 21 percentage points, and in comparison to Poland – by 36 percentage points. The smallest percentage of households with broadband Internet access was noted in Bulgaria (56.7%). In 2017, in Poland 72.7% of people aged 16-74 used the Internet regularly (at least once a week), as compared to 69.9% in the previous year. In 2017, in the European Union the percentage of regular Internet users was 79%. The Polish distance to the EU average decreased and was 9 percentage points. The highest share of regular Internet users was noticed in Luxembourg (97%) and the lowest in Romania (56%). The EU countries were significantly diverse as regards the number of ICT specialists in total employment and the number of the graduates of scientific and technical studies. In the EU countries the highest number of the graduates of scientific and technical studies per 1000 people aged 20-29 was in Ireland (24.7) and in France (23.4) and the lowest – in

Luxembourg (2.5) and Cyprus (9.2). The most common activities undertaken by household members are as follows: downloading and listening to music, watching films and playing computer games; being present on social media, using online banking and shopping online. In 2017, 56% of Polish people aged 16-74 shopped online. The highest percentage of people ordering or buying goods and services through the Internet for private use was noted in Great Britain (87%) and Denmark (84%), and the lowest in Romania (18%) and Bulgaria (27%). Among the electronic services of public administration in the analyzed European countries, the greatest popularity was held by browsing for the information on public administration websites and filling in the online forms. In 2017, 37% of European Union residents used these functions, i.e.: 12 percentage points more than in Poland. The leading countries as regards the above-mentioned functions were Estonia (78%) and Denmark (73%). The list was closed by Romania (5.8%) and Bulgaria (10.5%).

Table 1: Diagnostic variables to evaluate the Internet access and its use in households of the EU countries and the variables’ characteristics

| The name of the variable and its symbol | Mean | V in % |
|---|------|--------|
| X ₁ - Fixed Broadband Take-up, % of households subscribing to broadband (S) | 72.4 | 14.6 |
| X ₂ - Mobile Broadband Take-up, Number of mobile data subscriptions per 100 people (S) | 84.7 | 28.5 |
| X ₃ - At Least Basic Digital Skills, all people (aged 16-74) - % people(S) | 55.5 | 25.2 |
| X ₄ - ICT Specialists, % employed people (S) | 3.4 | 36.9 |
| X ₅ - People with a degree in science, technology, maths or engineeringrelated subjects , all people 20 to 29 years old, graduates in STEM per 1000 people (S) | 16.6 | 30.0 |
| X ₆ - People who used the internet to read online news sites, newspapers or news magazines, all people (aged 16-74) - % internet users (S) | 76.0 | 14.6 |
| X ₇ - People who used the internet to play or download games, images, films or music, all people (aged 16-74) - % internet users (S) | 79.5 | 9.7 |
| X ₈ - People who used the internet to use Video on Demand services, all people (aged 16-74) - % internet users (S) | 19.4 | 65.6 |
| X ₉ - People who used the internet to make telephone or video calls, all people (aged 16-74) - % internet users (S) | 46.8 | 26.5 |
| X ₁₀ - People who used the internet to participate in social networks, all people (aged 16-74) - % internet users (S) | 68.2 | 13.5 |
| X ₁₁ - People who used the Internet to use online banking , all people (aged 16-74) -% internet users (S) | 59.5 | 38.2 |
| X ₁₂ - People who ordered goods or services online, all people (aged 16-74) - % internet users (S) | 59.2 | 29.9 |
| X ₁₃ - People sending filled forms to public authorities, over the internet, all people (aged 16-74) - % internet users (S) | 36.7 | 50.5 |

Table 2. Hellwig’s synthetic measure values for the EU countries in 2017 on the basis of GUS data

| Country | Z _i | Rank | Country | Z _i | Rank | Country | Z _i | Rank |
|-------------|----------------|------|-----------|----------------|------|----------|----------------|------|
| Denmark | 0.672 | 1 | Lithuania | 0.311 | 11 | France | 0.235 | 21 |
| Sweden | 0.604 | 2 | Ireland | 0.308 | 12 | Portugal | 0.227 | 22 |
| United | 0.515 | 3 | Germany | 0.304 | 13 | Czech | 0.217 | 23 |
| Finland | 0.511 | 4 | Croatia | 0.300 | 14 | Poland | 0.196 | 24 |
| Estonia | 0.508 | 5 | Austria | 0.295 | 15 | Greece | 0.166 | 25 |
| Netherlands | 0.481 | 6 | Latvia | 0.281 | 16 | Italy | 0.112 | 26 |
| Luxembourg | 0.460 | 7 | Slovakia | 0.274 | 17 | Bulgaria | 0.048 | 27 |
| Malta | 0.369 | 8 | Hungary | 0.259 | 18 | Romania | 0.001 | 28 |
| Belgium | 0.333 | 9 | Cyprus | 0.254 | 19 | | | |
| Spain | 0.314 | 10 | Slovenia | 0.241 | 20 | | | |

On the basis of the data in Table 2, it is evident that in the EU countries rank, as regards the Internet use by household members, obtained with the use of Z. Hellwig’s development pattern method, the top positions with the highest z_i measure value are held by: Denmark, Sweden and Great Britain. The rank list closes with the lowest z_i measure value obtained by: Romania, Bulgaria and Italy.

As a result of Ward’s method use, four similar groups of the EU countries were selected in relation to the examined diagnostic features which describe the Internet access and its use in households (Figure 1). The countries classified to particular categories are as follows:

- **cluster I** – the Netherlands, Luxembourg, Sweden, Finland, Estonia, Denmark. Those countries possessed the most favorable values of almost all diagnostic variables – significantly above the EU average (with the exception of X_5 variable – the number of the graduates of scientific and technical studies in this group was below the EU average); particularly this group of countries consisted of people who subscribe various forms of videos; use online banking and public administration websites; the highest percentage of ICT specialists in total employment could also be found in this group, as well as the highest number of mobile Internet subscribers per 100 people.

- **cluster II** – Malta, Hungary, Cyprus, Lithuania, Latvia, Portugal, Greece, Spain and Croatia. The afore-mentioned countries possess the values, of some of the variables, significantly higher than the EU average and they are: X_6 - the percentage of Internet users who read online news services, online newspapers and information magazines; X_7 - the percentage of people using Internet to download and play computer games, to download and watch films and listen to music; X_9 - the percentage of people using the Internet to make phone calls; X_{10} - percentage of Internet users who are present on social media;

- **cluster III** – Romania and Bulgaria. Those countries possess most of the indicators significantly lower than the EU average, apart from the variables X_9 and X_{10} . In this group, there is a particularly low percentage of people using the online public administration; people using online banking and shopping; people with basic or more than basic digital abilities;

- **cluster IV** – Italy, Slovakia, the Czech Republic, Poland, Great Britain, Germany, Slovenia, Belgium, France, Austria, Ireland. This group of countries is characterized by the most favorable number of the graduates of scientific and technical studies, among all of the researched the EU countries (significantly above the EU average) and the high percentage of ICT specialists (above the EU average) in total employment and finally the high percentage of people using the Internet to shop online.

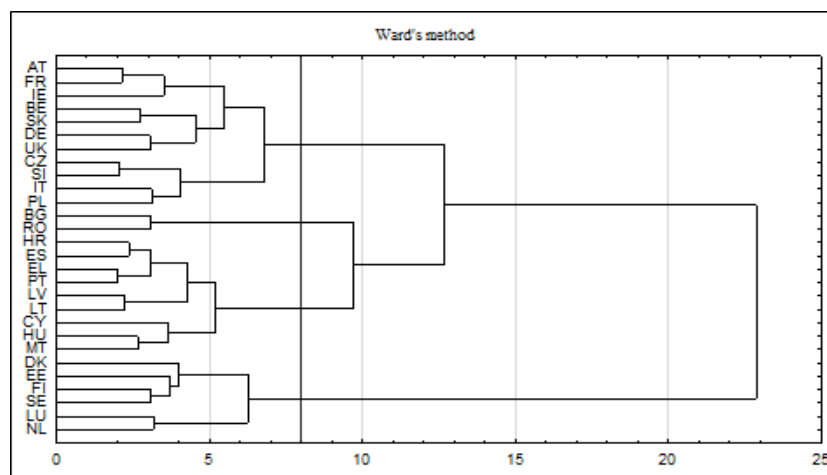


Figure 1: The EU countries division into similar groups on the basis of Ward’s method in 2017

THE PROBLEMATIC INTERNET USE AMONG YOUNG PEOPLE – RESULTS OF RESEARCH

In 2017 according to the Statistics Poland (GUS) data 81.8% of households, with at least one person aged 16-74, possess at home at least one computer. In 2017, the Internet access was noted in 81.9% of households, but the Internet access as well as the type of Internet connection was diverse as regards the type of the household, the class of place of living and the degree of urbanization. The Internet access could be found more frequently in households where there were children, rather than in households without them (in 2017, 73.3% of total number of households without children and 98.8% of total number of households with children in Poland had the Internet access at home). The most popular device with the Internet access was a smartphone possessed by 59.9% of the total number of respondents of Polish households, where 91.5% of total number of respondents aged 16-24 owned their own smartphone. It results from the data of Statistics Poland (GUS) that having the smartphone is defined mostly by the age of the respondent. In 2017, the smartphone was possessed by 91.5% of people aged 16-24, while compared to the same group in 2014, we can observe the increase by 43.1%. Still, the smallest interest of the smartphone is indicated by the group aged 65-74; the percentage of people having a smartphone was 14.9% and in the period of 3 years it increased almost 5 times. It results from the subject literature that young people are the group in population which most frequently possesses and uses intensively the modern means of information and communication, especially laptop computers and smartphones with the Internet access. In modern times, the problematic Internet use, especially by young people and young adults, becomes more and more of a psychosocial problem (Jarczyńska, 2015).

In the literature, there is not one common term to define the term ‘the problematic Internet usage’, because among the researchers there is a lack of consensus in relation to terminology: dysfunctional Internet use (Błachnio et al. 2014), Internet addiction (Grohol 1999); pathological Internet use (Pawlikowski et al. 2014). The main issue of this research is risky / problematic Internet use and it is due to the fact that middle school students who have been the subject of the research are the people who have just begun their independent, intensive contact with the Internet and with the modern means of communication such as tablet computer and smartphone with Internet access.

This article is a presentation of a small part of empirical research results which were conducted between 2015 and 2016 on the representative sample the students of middle and secondary schools in Silesia voivodship. The conducted research focused on the threats connected with the use and overuse of the new media (the Internet, mobile phones, computer games and gambling) by adolescents. The questionnaire for students was constructed by the team conducting the research in cooperation with the specialists of addiction therapy and it contained the screen test to research pathological Internet use (Young’s test – IAT: Internet Addiction Test – by Young, 2011; Polish adaptation by Poprawa, 2011 and by Hawi et al., 2015; the described scale has got confirmed high psychometric parameters). The selection of sample was random – multistage layered sample including the type of school, the size of city and the age of a student. The operand of drawing was the register of schools received from Silesian Board of Education. There were 1333 middle school students and 1336 secondary school students that took part in the research (adopted number of middle school students population was 116460 people and adopted number of secondary school students population was 129772 people).

Internet activities of young people and the costs of Internet and mobile phones use

The results of the research conducted among Silesian young people indicate that the students of middle and secondary schools are equipped in modern communication means on a satisfactory level. It is estimated that in the population of students of middle and secondary schools of Silesia, a computer (one or more) is present at homes of 66% of middle school students and 71.4% of secondary school students, slightly over half of the middle and secondary school students (52%) possessed a laptop computer, about 45% of middle school students and 48% of secondary school students possessed a mobile phone, and around 80% of middle and secondary school students possessed a

smartphone. It is estimated that in the population of students of Silesian schools, the Internet access in a phone could be noticed in 75% of middle school students and in 80% of secondary school students. The most frequent Internet activities of the researched middle and secondary school students are presented below (Figure 2 presents the researched activities and their estimated percentage). It is estimated that Silesian middle and secondary school students most frequently use the Internet to: participate in social networking (less than 93% of middle school students and 94% of secondary school students); browse websites (95% of middle school students and 97% of secondary school students); listen to music / radio online (88% of middle school students and 92% of secondary school students); search educational information in order to prepare for the lessons (96% of middle school students and 96% of secondary school students); watch TV / films online (92% of middle school students and 95% of secondary school students); check emails (82% of middle school students and 89% of secondary school students); download and listen to music (88% of middle school students and 92% of secondary school students). Some of the Internet activities of students are alarming: it results from the estimated Internet activities fraction in the population of Silesian schools students that 17% of middle schools students and 20% of secondary schools students gamble in the Internet (lotteries, bets and casinos) or watch pornography – this behavior is attributed to every fourth student of middle school and to over 38% of secondary schools students.

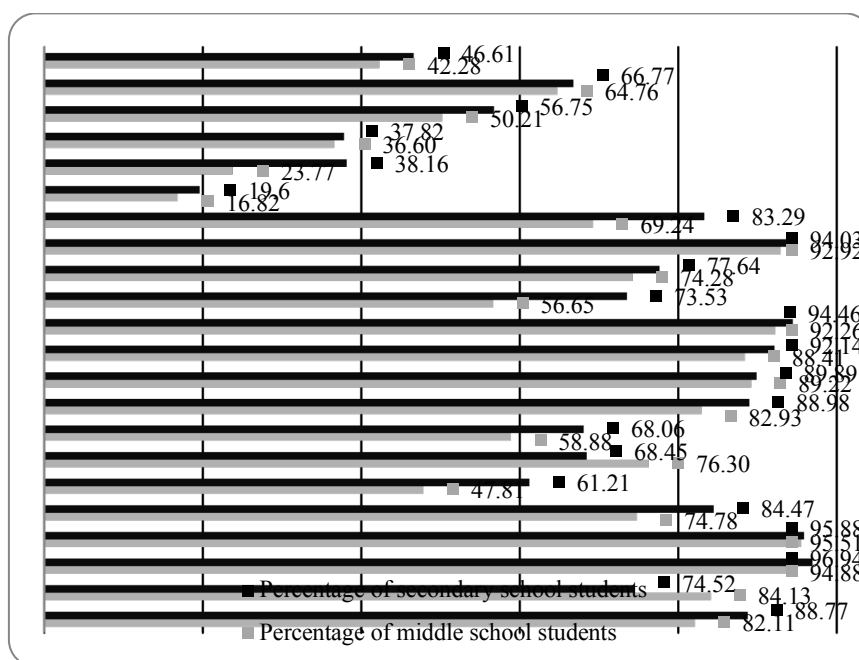


Figure 2: Estimation of Internet activities in the population of Silesian middle and secondary schools students fractions

The students of middle and secondary schools are better equipped in modern means of communication, including various types of mobile phones (most frequently those are smartphones). As regards the Internet and mobile phones use, there is a risk of problematic usage, but apart from that the costs borne by parents of young people need to be taken into consideration. Due to the fact that parents were also included in the research, the following data can be presented. It results from the questionnaire analysis that the mean cost of the phone purchase for a child in middle school is 467 zlotys, and the mean cost of using the phone by middle school students – the mean monthly bill paid by parents equals 30 zlotys. The highest bill amount paid by the parents in the year previous to the research was 330 zlotys. In comparison, the mean cost of the phone purchase for a student of

secondary school was 678 zlotys, but the most frequent price range of a phone was 300-500 zlotys (the answer given by 30% of parents who remembered the price of a purchased phone). The highest price for a phone declared by parents was 4000 zlotys. The mean cost of phone use by secondary school students equaled 38.8 zlotys. The highest bill for the phone use in the researched group, declared and paid by the parents in the previous year was 2000 zlotys. Whereas, the most frequent bill cost is between 20-30 zlotys (in the opinion of 35% of parents who remember the monthly costs for their child's phone). The opportunity to possess and use the Internet at home generates costs as well – the mean monthly cost of Internet use at home declared by the researched group of parents of middle school students is 54 zlotys, while the same cost declared by parents of secondary students was 57 zlotys.

Problematic internet use – Young's Internet Addiction Test IAT results

In the study of Silesian youth, the problematic use of the Internet was measured with Young's Internet Addiction Test IAT which is a test to measure the overuse of this kind of entertainment. It enabled to estimate the risk scale of problematic Internet use among Silesian middle and secondary school students.

It is estimated that (Graph 3 and Graph 4):

- 1.49% of Silesian middle school students and 0.93% of Silesian secondary school students are the people using the Internet problematically. The higher percentage of people using the Internet problematically is among middle school students from big cities (2.87%) rather than from other towns (0.45%), it's also higher among first class students (1.65%) than in second-class students (1.29%) or third-class (1.53%). However, the higher percentage of people using the Internet problematically is among secondary students from other towns (1.18%) rather than big cities (0.74%) and among students of vocational schools (1.46%) rather than in high schools (1.17%) or technical schools (0.54%);

- 8.88% of Silesian middle school students and 10.8% of Silesian secondary school students are the people at risk of problematic Internet use, whereas the higher percentage of people being at risk of problematic Internet use is among middle school students from big cities (10.50%) rather than among students from other towns (7.66%) and among third class students (10.02%) rather than second class students (9.58%) or first class students (7.03%). However, the higher percentage of people being at risk of problematic Internet use is among secondary students living in other towns (14.11%) than in big cities (8.18%) and among vocational schools students (22.16%) rather than in high school students group (7.25%) or technical schools (10%);

- the unquestionable majority, 89.63% of Silesian middle school students and 88.27% of Silesian secondary school students are the people using the Internet in a correct way.

The results of the research take into consideration the estimation of subpopulation characteristics (the division into big cities and other towns, the class of the student and the type of secondary school) – Graph 3 and Graph 4 include the before mentioned information.

The estimated mean value of this test in middle school students community equals to 27.54 with mean error of estimation equal to 0.7. This is why the evaluation of mean error of estimation, equals to merely less than 2.6%. The estimated mean value of this test in secondary school students community equals to 28.31 with mean error of estimation equal to 1.00. This is why the evaluation of mean error of estimation equals to merely less than 3.5%.

As it is presented in the research conducted by many science centers the problematic Internet use varies according to the country in which the research was conducted and the research tool which was used (Habrak, 2016). Young's test was used to identify the people who problematically use the Internet and on the basis of the results the situation of Silesian adolescents was exposed and compared. The outcome is as follows: Mak et al. (2014) tested adolescents between 12-18 years old in six Asian countries making use of Young's IAT and the percentage of people problematically using Internet is from 1.2% (South Korea) to 4.9% (Philippines). Polish research made by Young's test indicate that 2.8% problematically use the Internet and that the risk of and problematic Internet use itself relate more often to boys than girls (Pawłowska & Potembska, 2011; Warzecha & Żądło, 2017).

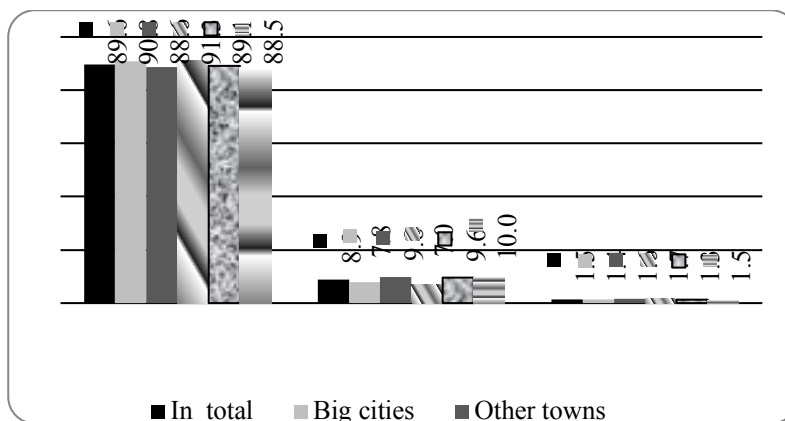


Figure 3: Estimations of middle school students fraction on the basis of Young’s test

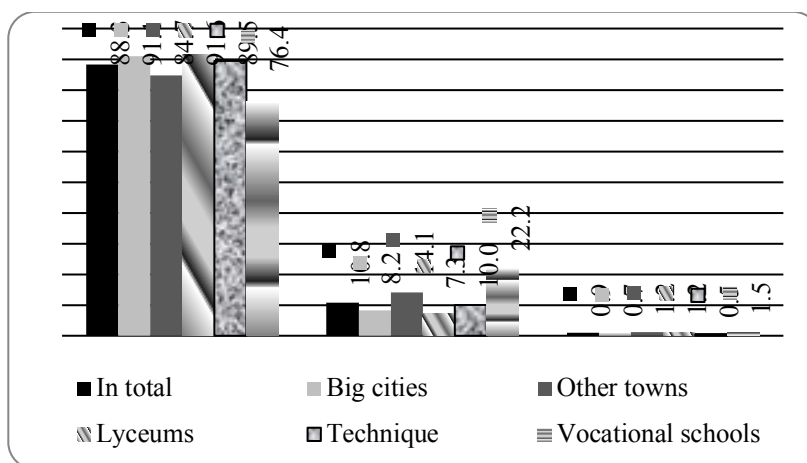


Figure 4: Estimations of secondary school students fraction on the basis of Young’s test

CONCLUSIONS

In conclusion, the analysis of basic indicators characterizing the possession and the use of Internet in households indicates a great diversity in the researched area between EU countries. This means that we still need time to observe the positive influence of integrational processes (meaning the equal conditions in this area). The research methods which were used, enabled the definition which EU countries are in the best and in the worst situation as regards the researched phenomenon and the classification of groups of EU countries similar as regards the chosen indicators which describe the Internet use. The conducted research shows that young people, due to the rapid technological advancement, are tempted more and more to have the most modern means of communication (especially smartphones with the Internet access). The wide range of offered possibilities may have the influence on their problematic use. As the research shows, the dominant group of Internet users is the group using this medium in a correct way. For them, it is a new technical improvement helping in obtaining knowledge and widening their mental horizons. The next group among researched Silesian adolescents were the people who are losing control over using the Internet as regards time, the way of use in general and for computer games, as well as neglecting their everyday duties. Incorrect way of Internet use may have negative health results (sight defect, spinal pains) and be the reason for social costs (the cost assigned for the purchase of new computer equipment, new mobile phone, the costs of

therapy in addiction treatment centers). Taking into consideration the advantages and disadvantages of modern Information and Communication Technologies everyday use by adults and young people, it is advised to monitor this phenomenon on a regular basis, in order to evaluate the changes in time and simultaneously decrease the rate of digital exclusion, because using ICT (and especially the Internet) in present times is a must. It raises significantly the quality of life and enables to take care about many everyday concerns without leaving the house (shopping, education, entertainment).

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Preventing environmental degradation in the EU countries

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ABSTRACT

In the present article, the level of environmental protection in the EU countries in comparison to other countries was researched. The research was based on 6 indicators which characterize the level of natural environment protection in various sectors between 2004 and 2005 and between 2014 and 2015. To classify the countries into homogeneous groups, Z. Hellwig's taxonomic measure of development was used. The classification of countries into 4 groups enabled the nomination of countries which protected natural environment in the highest degree at the beginning and at the end of the research period. The aim of the analysis was examination which of the countries put an emphasis on the environmental protection and which ones, beginning from 2004, did not noted significant progress as regards this issue. There was a hypothesis verification – countries classified in 2004 into the group with a very low level of environmental protection made the most significant progress to reach the level of countries which protect the environment at a very high level.

In 2004 the best environmental protection was noticed in Austria, Finland and Sweden; the worst condition was in Poland, Slovakia, the Czech Republic and Lithuania. Between 2004 and 2015, the most significant progress as regards the environmental protection was made by Lithuania, which advanced in the rank from the last position to rank 6 – the group with the high level of environmental protection. The considerable progress was made also by Sweden, Denmark and Romania. In 2015, Sweden, Austria and Germany were the countries which protected their environment in the highest degree.

Keywords: *environmental protection, Hellwig's taxonomic measure of development*

INTRODUCTION

The aim of the present article is the analysis of the EU countries progress in preventing the world's environmental degradation. The prevention of unfavorable changes in the natural environment belongs to sustainable development guidelines which are currently fostered widely all over the world. The sustainable development has been defined as the process of changes which enables satisfaction of needs of current generation without diminishing the developmental chances of future generations, among others, owing to integrated actions in the range of economic and social development and in the range of environment (*Our Common Future*, 1987).

The analyzed period of time was between 2004 and 2005 and between 2014 and 2015. However, the strongest interest is in the change of indicators which took place in 2015, in comparison to 2004.

The environmental degradation is a very vast notion. This is why, there were 6 indicators adopted to analysis, to represent the effects of the EU countries actions to protect the environment:

- the greenhouse gas emission per unit of used energy,
- the acidifying pollutants emission per 1km² (sulfur dioxide),
- woodiness,
- municipal solid waste per 1 resident,
- the recycling of packaging waste,
- the share of renewable energy sources in gross final energy consumption.

The aim of the analysis is the examination of the countries which protect the environment in a most complex way (as regards all analyzed indicators) and of those which made the most significant progress as regards this issue. The research hypothesis was stated – the countries that in 2004 possessed the lowest level of environmental protection, tried to reach the level of countries with a considerable level of environmental protection and they made the most significant progress.

Croatia was excluded from analysis because of the lack of the data. The data concerning the acidifying pollutants emission and the recycling of packaging waste comes from 2005 and 2014. The data concerning the share of renewable energy sources, woodiness and the greenhouse gas emission comes from 2004 and 2014.

The data regarding the municipal solid waste for Ireland and Greece comes from 2012 and the data for Greece regarding the recycling of packaging waste is from 2013. The availability of the data was a reason for the before mentioned information.

All of the data is available on Polish Statistical Office website (www.stat.gov.pl).

LITERATURE OVERVIEW

The most important documents of international organizations mentioning the issue of environmental protection are as follows:

- Action Programme – Agenda 21,
- Europe 2020 Strategy,
- Declaration: The Future We Want,
- Transforming our World: the 2030 Agenda for Sustainable Development.

The issue of environmental protection was touched upon many times by researchers all over the world. This issue is very broad and it enables the research from many point of views. The connection between the environmental protection and economy was researched by, among others: B. Copeland and M. Taylor (2004), G. Haq (2001) or R. Morgenstern, W. Pizer and J-S. Shih (1998). The Allocation of Emission Allowances within the European Union Emissions Trading Scheme to the Waste Sector was in the center of interest of N. Braschel, A. Posch and V. Pusterhofer (2013).

The international organizations, such as European Commission (1994, 2004) or Eurostat (2001), publish the releases concerning the environmental protection and the costs connected with it. However, there are not many publications presenting the comparison of the results of actions undertaken in the range of environmental protection by various countries.

In the article by K. Warzecha and A. Wójcik (2017), the authors researched the level of implementation of key targets of Europe 2020 Strategy. In the present article, only the analysis of the indicators concerning environmental indicators can be found.

EVALUATION OF THE ACTIONS AIMING AT THE PREVENTION OF ENVIRONMENTAL DEGRADATION IN THE EU COUNTRIES

The taxonomic measure of development by Z. Hellwig was used to evaluate the actions undertaken by the EU countries (the description of measure: Zeliaś, 2000; Warzecha, 2009; Warzecha, Wójcik, 2017), this measure enabled the classification of the research objects (EU countries) as regards the researched phenomenon. All of the indicators were divided into stimulants and destimulants, subsequently the destimulants were changed into stimulants ($D \rightarrow S = \max x_{ij} - x_{ij}$).

Destimulants were changed into stimulants according to the pattern ($D \rightarrow S = \max x_{ij} - x_{ij}$) and then normalized (because the diagnostic variables in the research are given in various units of measure they cannot be submitted directly to aggregation) according to pattern 1 with the use of a zero unitarization method (for stimulants):

$$z_{ij} = \frac{x_{ij} - \min\{x_{ij}\}}{\max\{x_{ij}\} - \min\{x_{ij}\}} \quad (1)$$

where: $\min x_{ij}$ - minimum of variable x_i ; $\max x_{ij}$ – maximum of variable x_i .

Having normalized variables, it is possible to define the distance from the development pattern P_0 between particular objects. The development pattern in this case is abstract point P_0 with standardized coordinates

$$P_0 = [z_{01}, z_{02}, \dots, z_{0k}] \quad (2)$$

The coordinates of point P_0 are defined with the use of pattern 4 because all of the variables are stimulants.

$$z_{0j} = \max\{z_{ij}\} \quad (3)$$

Further on, the pattern 4 is used to calculate the Euclidean distance:

$$d_{i0} = \sqrt{\sum_{j=1}^k (z_{ij} - z_{0j})^2} \quad (i = 1, 2, \dots, m) \quad (j = 1, 2, \dots, k) \quad (4)$$

where: k, m – are accordingly number of the variables and number of the objects,

z_{ij} – standardized values of variable j for object i ; z_{0j} – standardized pattern value for variable j .

Owing to Hellwig’s taxonomic measure of development we may classify the objects into four classes: starting from countries which protect the environment at the high level to countries with very low level of environmental protection while compared to other countries. The result of the analysis is a rank of countries.

Class I – high level of environmental protection when $z_i > \bar{z}_{1i}$

Class II- moderate level of environmental protection when $\bar{z}_i < z_i \leq \bar{z}_{1i}$

Class III- low level of environmental protection when $\bar{z}_{2i} < z_i \leq \bar{z}_i$

Class IV- very low level of environmental protection when $z_i \leq \bar{z}_{2i}$

where: \bar{z}_i - mean taken from development measure value i , \bar{z}_{1i} , \bar{z}_{2i} - indirect means taken from development measure value.

To evaluate the EU countries actions for environmental protection, Hellwig’s taxonomic measure of development was calculated for 2004 and 2015 and the results were compared subsequently.

In 2004, all of the indicators at the highest level (after the change of destimulants into stimulants) could be noticed in the countries as follows: Austria, Finland, Sweden, Slovenia, Bulgaria and Estonia. In 2015, among the before mentioned countries, only the following remained in the same group: Sweden (advancement to 1st position), Austria, Bulgaria and Slovenia. Germany and Lithuania also reached the highest group in 2015. Interestingly enough, Lithuania advanced from the last position to 6th place in the rank – it manifests the Lithuanian’s contribution into environmental protection between 2004 and 2015.

In the group of very low level of environmental protection in 2004 there were following countries: Romania, Cyprus, Malta, Poland, Slovakia, the Czech Republic and Lithuania. In 2015, this group was left by Cyprus, Slovakia and Lithuania, while the United Kingdom and Hungary joined it.

Table 1: Values of Hellwig’s synthetic measure in 2004, 2015 for EU and the division for typological groups

| No. | EU countries | 2004 Z_i | Typological group | EU countries | 2015 Z_i | Typological group |
|-----|--------------------|------------|----------------------------|--------------------|------------|----------------------------|
| 1 | Austria | 0,390 | Class I high level | Sweden | 0,275 | Class I high level |
| 2 | Finland | 0,356 | | Austria | 0,260 | |
| 3 | Sweden | 0,326 | | Germany | 0,258 | |
| 4 | Slovenia | 0,273 | | Bulgaria | 0,244 | |
| 5 | Bulgaria | 0,272 | | Slovenia | 0,220 | |
| 6 | Estonia | 0,270 | | Lithuania | 0,218 | |
| 7 | Spain | 0,258 | Class II moderate level | Portugal | 0,190 | Class II moderate level |
| 8 | Luxembourg | 0,237 | | Spain | 0,180 | |
| 9 | Portugal | 0,229 | | Luxembourg | 0,178 | |
| 10 | Germany | 0,229 | | Cyprus | 0,174 | |
| 11 | Denmark | 0,227 | | Estonia | 0,172 | |
| 12 | Italy | 0,201 | | Latvia | 0,169 | |
| 13 | Latvia | 0,198 | | Italy | 0,163 | |
| 14 | Belgium | 0,194 | Class III low level | Finland | 0,162 | Class III low level |
| 15 | France | 0,181 | | Denmark | 0,141 | |
| 16 | Greece | 0,166 | | France | 0,128 | |
| 17 | The United Kingdom | 0,144 | | Belgium | 0,123 | |
| 18 | Ireland | 0,137 | | The Netherlands | 0,111 | |
| 19 | Hungary | 0,127 | | Greece | 0,108 | |
| 20 | The Netherlands | 0,126 | Class IV very low level | Ireland | 0,094 | Class IV very low level |
| 21 | Romania | 0,101 | | Slovakia | 0,088 | |
| 22 | Cyprus | 0,100 | | The Czech Republic | 0,083 | |
| 23 | Malta | 0,083 | | Romania | 0,079 | |
| 24 | Poland | 0,058 | | Poland | 0,069 | |
| 25 | Slovakia | 0,057 | | The United Kingdom | 0,065 | |
| 26 | The Czech Republic | 0,050 | | Hungary | 0,000 | |
| 27 | Lithuania | 0,042 | Malta | -0,007 | | |

To answer the question which countries made the most significant progress as regards environmental protection, Hellwig’s taxonomic measure of development was calculated for relative and absolute differences between the particular indicators in 2015 and 2004. It is much easier to obtain higher values of Hellwig’s measure of development for relative differences while beginning from the low limit, but at the same time the measure will demonstrate striving of countries for better natural environment protection. Whereas the measure calculated for absolute values will demonstrate actual effects of actions undertaken for environmental protection by particular countries.

Table 2: Values of Hellwig’s synthetic measure for relative (1) and absolute (2) differences of particular indicators in 2015 and 2004.

| No. | <i>EU countries</i> | 1 <i>Z_i</i> | Typological group | <i>EU countries</i> | 2 <i>Z_i</i> | Typological group |
|-----|---------------------|---------------------------|----------------------------|---------------------|---------------------------|----------------------------|
| 1 | Malta | 0,345 | Class I high level | Lithuania | 0,532 | Class I high level |
| 2 | Lithuania | 0,324 | | Sweden | 0,373 | |
| 3 | Poland | 0,269 | | Denmark | 0,363 | |
| 4 | Cyprus | 0,257 | | Romania | 0,361 | |
| 5 | Germany | 0,221 | | Greece | 0,341 | |
| 6 | Slovakia | 0,221 | | Italy | 0,333 | |
| 7 | The Czech | 0,199 | Class II moderate level | Slovakia | 0,321 | Class II moderate level |
| 8 | Latvia | 0,183 | | Poland | 0,296 | |
| 9 | Denmark | 0,180 | | The Czech Republic | 0,290 | |
| 10 | The Netherlands | 0,175 | | Bulgaria | 0,290 | |
| 11 | France | 0,163 | | Cyprus | 0,274 | |
| 12 | Sweden | 0,162 | | Germany | 0,250 | |
| 13 | Greece | 0,161 | | France | 0,249 | |
| 14 | Luxembourg | 0,159 | Class III low level | Slovenia | 0,235 | Class III low level |
| 15 | Hungary | 0,139 | | Latvia | 0,221 | |
| 16 | The United Kingdom | 0,136 | | Estonia | 0,191 | |
| 17 | Italy | 0,135 | | Portugal | 0,187 | |
| 18 | Austria | 0,123 | | Spain | 0,178 | |
| 19 | Romania | 0,120 | | Hungary | 0,177 | |
| 20 | Bulgaria | 0,114 | Class IV very low level | Finland | 0,174 | Class IV very low level |
| 21 | Finland | 0,103 | | Austria | 0,147 | |
| 22 | Ireland | 0,091 | | The Netherlands | 0,113 | |
| 23 | Estonia | 0,078 | | Ireland | 0,109 | |
| 24 | Belgium | 0,077 | | Belgium | 0,108 | |
| 25 | Slovenia | 0,056 | | The United Kingdom | 0,090 | |
| 26 | Portugal | 0,039 | | Luxembourg | 0,038 | |
| 27 | Spain | 0,016 | Malta | 0,005 | | |

It was expected, that the smallest relative progress could be noticed in the countries from 1st class (Table 1, 2004). However, only 2 countries from this group could be found in the class with the lowest level of relative changes of indicators (Estonia and Slovenia). The remaining countries with the smallest relative progress in protection of environment are as follows: Ireland, Belgium, Portugal and Spain.

Obviously, even the insignificant relative increase of the indicator of one country may mean bigger indicators increases for the absolute values, rather than big relative indicator increase of the other country – this is why, attention should be paid to Hellwig’s measure of development calculated for absolute changes of particular indicators.

Definitely, the most significant increase of particular indicators, hence the highest value of Hellwig’s indicator was noted in Lithuania. The considerable indicators increases, in comparison to other countries, were noted in Sweden, Denmark and Romania. In the 1st group we can find as well Greece and Italy.

Despite that Malta noted the most significant relative indicators increases, its absolute indicators increases turned out to be the smallest. In group 4, we can find as well the countries which in 2004 were classified as moderate class as regards the environmental protection (the Netherlands, Ireland, Belgium and the United Kingdom – group 3) and Luxembourg.

CONCLUSIONS

The environmental protection is a very important issue for the EU. Only in Poland between 2007 and 2013, €4.2 billion from European funds were designated for the aims connected with environmental protection. Those considerable amounts designated for the environmental aim resulted in the increases of most indicators (those which were stimulants) and the decrease of indicators being destimulants in all of the EU countries.

It results from the analysis, that the countries which possessed in 2004 the most significant backlogs connected with environmental protection, currently are making significant progress to reduce this backlog. Furthermore, Sweden which held 2nd position in the rank in 2004 made significant progress as well and it was ahead of Austria in 2015.

The biggest relative progress in environmental protection was made by Malta, but analyzing the detailed data it turned out that there was a big increase of only one indicator – the share of renewable energy sources in gross final energy consumption – but it increased 50 times.

In 2004, as well as in 2015 four countries remained in the 1st class, meaning the class with the highest level of protection of natural environment, and they are as follows: Sweden, Austria, Bulgaria and Slovenia. However, Lithuania made so much progress that it is expected to advance more in the rank in the future.

Obviously, the analysis was made on the basis of 6 indicators. If other indicators are chosen the order will probably be different. It is advised in further research to broaden the list of indicators while taking into consideration the data availability.

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THE RELATIONSHIP BETWEEN REAL EFFECTIVE EXCHANGE RATE AND TERMS OF TRADE: THE ANALYSIS OF TURKEY

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ABSTRACT

The improvement in the terms of trade, while the other conditions are constant, allows for higher imports in exchange for export provisions. An external shock to terms of trade can also affect the exchange rates in a relatively small country. The improvement in the terms of trade increases export prices. Under the assumption that the pass-through effect of the exchange rate changes on prices is high and that goods subject to foreign trade are elastic, depreciation or appreciation of the national currency is expected to affect the terms of trade by setting the relative export price. This study investigate the existence of co-integration and causality relationship between the real effective exchange rate and terms of trade in Turkey for the period 2010-2017. The results demonstrated the existence of a long-term co-integration relationship between terms of trade and real effective exchange rate. The Granger causality test results showed that there was a two-way causality between these two variables. In other words, it was found that both the changes in the real effective foreign exchange rates affect the external terms of trade and the changes in the external terms of trade affect the real effective foreign exchange rate.

Keywords: Terms of Trade, Real Effective Exchange Rate, Cointegration Analysis
JEL Codes: F41, F31, C39

INTRODUCTION

Terms of trade determine the relative international trade prices of the nations. Improvement in the terms of trade, while the other conditions are constant, allows for higher imports in return of exports. This may result in an increase in the wealth of nation by enabling the purchase of imported input goods and technologies. On the other hand, a deterioration in the terms of trade in a country is called as immiserizing growth by Bhagwati (1958). Although the country increases its national income compared to the previous year, if the external terms of trade are deteriorating, then the country can purchase less import goods per unit of exports or needs to sell more goods to import the same amount. This indicates that the purchasing power of exports has fallen and is called immiserizing growth. Volatility in the terms of external trade affect foreign trade volume and thus, the current balance via revenues and total savings (Harberger, 1950; Laursen-Metzler, 1950). Therefore, several empirical studies investigated the correlation between the level and volatility of the terms of trade and macroeconomic variables such as the level of national investments, savings, consumption, net exports and exchange rates in the literature.

An external shock on terms of trade can also affect the exchange rates in a relatively small country. The underlying assumption behind the studies relying on terms of trade and exchange rates is that foreign shocks on terms of trade result in relative price correction through exchange rate changes in small countries. Because, small countries could change the international prices of foreign trade goods by appreciating or depreciating the exchange rate of the domestic currency (Keskin, 2009).

The improvement in the terms of trade increases export prices. This leads to an increase in demand and appreciation of the domestic currency. Therefore, a change in relative domestic prices can result in a greater change in exchange rates under the assumption of purchasing power parity. Both internal and external influences that determine exchange rates and foreign trade terms make it difficult to empirically analyze the correlation between these two variables.

The changes in exchange rates are the most important macroeconomic variable in determination of export and import prices. The present study aimed to investigate the correlation and the direction of this correlation between the real effective exchange rates and terms of trade in Turkey in the 2010-2017 period. In the literature, the selected studies that examined the relationship between foreign exchange rates and terms of trade has been summarized. In the third section, the data and the methodology of the and the results of the empirical tests are presented. In the final section, the study findings are discussed.

LITERATURE REVIEW

Exchange rate is an important macroeconomic variable since it determines the prices of commodities that are subject to international trade. Terms of trade are expected to be affected by real exchange rates. Because, when the real effective exchange rates rise (indicates appreciation of TL), export goods become relatively expensive, while import prices become relatively inexpensive. Thus, the terms of trade of the country increases.

The results of empirical studies in the literature are very diverse. There are studies where no correlation was determined between exchange rates and terms of trade, while in several studies, a significant co-integration and causality was determined between these variables. The findings demonstrate that there was an agreement about the existence of a correlation between terms of foreign trade and exchange rates, however there was no consensus on the direction of the causality relationship.

In a study by Yapraklı (2006), the correlation between foreign trade price indices and the real exchange rate was econometrically analyzed with Granger causality, co-integration and error correction models using 1982-2004 data for Turkey. Analysis results demonstrated that the real exchange rate was negatively affected by imports, and positively affected by exports in the long-term. However, there was no causality from the real exchange rates to import and export prices, and there was unidirectional causality from import prices to export prices.

Keskin (2009) divided the exchange rate policies implemented in Turkey between 1984 and 2007 into four periods using quarterly data to examine the relationship between real exchange rates and terms of trade. In the study, the data were interpreted with VAR analysis method, Granger causality, impulse response functions. The analysis results demonstrated that there was a causality relationship between the exchange rates and the terms of trade in the first, second and fourth periods and that there was a weak correlation between the exchange rates and the terms of trade in the third period. Çavdar (2011) analyzed the two variable model that included terms of trade and real exchange rates series using the Granger causality and co-integration tests. As a result of the Granger causality test, it was found that there was a causality from the terms of trade to the real exchange rate. As a result of the Johansen-Juselius co-integration test, a long-term correlation between the variables was determined.

In a study by Güneş et al. (2013), the real exchange rate, world oil prices and terms of trade indices were tested with structural VAR model for the period 1995-2010 in Turkey. It was reported that the shocks experienced in the terms of trade affected the real exchange rates in the same direction, but in a continuously decreasing manner.

The studies in the literature on Turkey revealed the presence of a co-integration relationship. In the present study, it was planned to analyze the short and long term correlations again with current data.

DATA AND METHODOLOGY

The terms of trade (TOT) monthly data (2010 base year) was obtained from the Turkish Statistical Institute database, and the real effective exchange rate (REER) data (2003 base year) was obtained from the Central Bank of Turkey database. Whether the series has unit roots (stationarity) was tested with the extended Augmented Dickey Fuller (1981) unit root test. The existence of a co-integration between the series was analyzed by employing the Johansen Co-integration test. Then error correction model was constructed to prevent the losses in long-term data. The Granger causality test was also conducted to determine the existence of causality between the variables.

Unit Root Tests

The unit root test is an application designed to determine whether the series are stationary. If the series are stationary, the shock that might occur would be temporary. Over time, the effect of the shock would decrease and the series would return to their average levels in the long run. If the series are not stationary, there is no long-term average that the series can return back to after the shock. If the series are not stationary, the variance will not be consistent with the parameters predicted by the simple least squares method and the regression equation would give unrealistic results (Barış and Demircioğlu, 2006).

Below are the results of the ADF test (Augmented Dickey Fuller) conducted for terms of trade and real effective exchange rate unit root tests.

Table:1 Augmented Dickey Fuller Unit Root Tests

| Level Values | | | First Differences Values | | |
|----------------------|-----------|-----------|--------------------------|-----------|-----------|
| | REER | TOT | | REER | TOT |
| ADF test st. | -1.144301 | -1.041459 | ADF test st. | -7.367248 | -8.750899 |
| %1 cr. value | -3.502238 | -3.501445 | %1 cr. value | -3.502238 | -3.502238 |
| %5 cr. value | -2.892879 | -2.892536 | %5 cr.value | -2.892879 | -2.892879 |
| %10 cr. value | -2.583553 | -2.583371 | %10 cr.value | -2.583553 | -2.583553 |

The main ADF test hypothesis is constructed based on the non-stationarity of the series. The values calculated for the first differences in the EViews output for the TOT and REER series were found higher when compared to table critical values based on the absolute values. The main hypothesis for the TOT and REER series cannot be rejected, and the series became stationary after the first differences were taken.

Since AIC and SC contained the sum of squares of the error terms (RSS), the number of lags that provide the smallest values for these criteria can be determined as the optimal number of lags. As presented in Table 2 it was found that the optimal lag length to conduct VAR analysis with stationary variables was "2" based on the FPE, AIC and HQ criteria.

Table:2 Determination of the Optimal Lag Lengths

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|-----------|----------|-----------|-----------|-----------|----------------------|
| 0 | -334.1040 | NA | 8.504704 | 7.816371 | 7.873449* | 7.839343 |
| 1 | -329.7142 | 8.47330 | 8.428420 | 7.807307 | 7.978540 | 7.876220 7.816990 |
| 2 | -321.1918 | 16.05389 | 7.588564* | 7.702134* | 7.987523 | * |
| 3 | -318.6130 | 4.737631 | 7.847185 | 7.735187 | 8.134732 | 7.895985 |

VAR Model

The VAR (Vector Auto-Regression) model was first developed by Sims in 1980. Sims opposed the distinction between the endogenous and the exogenous variables and developed the VAR model by advocating that every variable in an econometric model could affect another variable and these variables could be affected by other variables (Sims, 1980: 1-49). The VAR model does not only reflect a bidirectional relationship between variables, but also investigates forward and backward links between the variables (Kearney and Monadjemi, 1990: 197-217).

In economic life, it is observed that macroeconomic variables influence each other. Thus, it is not possible to discriminate the data as endogenous and exogenous variables. Difficulties such as the discrimination of endogenous and exogenous variables are removed with the Vector Autoregressive Model (VAR) used in the simultaneous equation systems (Darnell, 1990: 114-116). In VAR models, dynamic relations can be examined without any restrictions on the structural model and these are often favored in time series (Keating, 1990: 453-454). Furthermore, the inclusion of lagged values of dependent variables in VAR models makes it possible to make strong predictions for the future (Kumar, Leona, Gasking, 1995: 365).

In the VAR model, it is preferable that the series are stationary. Because, shocks are temporary in stationary time series. That is, the effect of the random shock introduced to the system disappears over time and the series return to the long term equilibrium levels, however the shocks are permanent in the non-stationary time series.

Johansen Co-integration Analysis

The Johansen (1991) test is based on eigenvalues and eigenvectors. According to the theory of co-integration, in order to talk about the long-term correlation between the economic series, these must first be stable at the same degree.

Table:3 Johansen Co-integration Analysis

| Hypotheses | Eigenvalue | Trace Statistics | % 5 Critical Value | Probability |
|------------|------------|------------------|--------------------|-------------|
| N/A* | 0.451529 | 71.89918 | 15.49471 | 0.0000 |
| Maximum 1* | 0.172611 | 17.24272 | 3.841466 | 0.0000 |

Considering the analysis values, the main hypothesis is that there is no co-integration. When the eigenvalue and trace values are greater than the 0.05 critical value, the main hypothesis is rejected. Since the eigenvalues and trace values in Table 3 are higher than the critical value, it was observed that there was a long-run correlation between the series.

Error Correction Model

A significant principle for co-integrated variables is the presence of deviations in the long-run equilibrium over time. In the error correction model, the short-term dynamics of the system variables are affected by the deviation from the equilibrium (Şahbaz, 2009: 89). The error correction model equation includes the first differences of the variables as well as the one-period lagged errors of the co-integration regression. One of the advantages of using the error correction model is the fact that it reveals short and long-term causalities and determines and corrects the imbalance between the variables (Enders, 1995: 122).

Table:4 Error Correction Model

| CointegratingEq: | CointEq1 |
|------------------|----------|
| DTOT(-1) | 1.000000 |

| | | |
|-------------------------|---|--|
| DREER(-1) | -0.397896 (0.06493) [-6.12824] | |
| C | -0.190185 | |
| ErrorCorrection: | D(DTOT) | D(DREER) |
| CointEq1 | -1.010695 (0.14939) [-6.76566] | 1.023099 (0.31841) [3.21320] |
| D(DTOT(-1)) | 0.054569 (0.11307) [0.48261] | -0.865696 (0.24100) [-3.59208] |
| D(DTOT(-2)) | -0.014103 (0.09018) [-0.15638] | -0.709484 (0.19222) [-3.69102] |
| D(DREER(-1)) | -0.329664 (0.06299) [-5.23332] | -0.114911 (0.13427) [-0.85585] |
| D(DREER(-2)) | -0.104222 (0.05580) | -0.044014 (0.11894) |
| C | [-1.86776] 0.000784 (0.12159) [0.00645] | [-0.37006] -0.079989 (0.25915) [-0.30865] |

Based on the result of the constructed error correction model, about 39% of the disruption that occurred between the series for the previous period would reach a balance in the long term.

Granger Causality Analysis

Granger analysis is used to test the causality between time series. The Granger causality test tests whether the current value of a variable is correlated with the past values of another variable (Granger, 1969: 553-560). Granger developed a relatively simple test that identifies the causality between variables. According to Granger, if the prediction of Y is more successful when the past values of X are used when compared to the condition where the past values of X are not used, it can be stated that X is the Granger cause for Y (Granger: 1988, p.554).

Table:5 Granger Causality Analysis

| Dependent Variable: D(DTOT) | | | |
|-------------------------------------|----------|----|--------|
| Independent Variable: | Chi-sq | df | Prob. |
| D(DREER) | 30.42937 | 2 | 0.0000 |
| Dependent Variable: D(DREER) | | | |
| Independent Variable: | Chi-sq | df | Prob. |
| D(DTOT) | 16.96500 | 2 | 0.0002 |

Analysis results presented in Table 5 demonstrate that since the probability of the real effective exchange rate is smaller than 0.05, the main hypothesis that the independent variable is not the cause

of the dependent variable is rejected. Thus, the real effective exchange rate is the cause of the terms of trade. Similarly, since the probability of the terms of trade is smaller than 0.05 where the real effective exchange rate is a dependent variable, the main hypothesis is rejected, thus the terms of the trade is the cause of the real effective exchange rate. In other words, there is a bi-directional causality relationship between variables.

CONCLUSION

In the present study, the existence of cointegration and causality relationship between the real effective exchange rate and terms of trade for Turkey for the period from 2010:01 to 2017:11 was analyzed. The findings showed that there was a long term co-integration between the real effective exchange rates and terms of trade. Furthermore, the Granger causality test results demonstrated that there was a bidirectional correlation between these variables. In other words, it was found that both the changes in the real foreign exchange rates affect the terms of trade and the changes in the terms of trade affect the real effective exchange rate. The deviations observed during the long-term analyses were tested with the error correction model and the long-term deterioration was removed. Thus, it was observed that the exchange rate was a significant variable that affects the terms of trade through imports and exports.

The terms of trade data, calculated by dividing the Turkish exports unit value index by imports unit value index, do not reflect the impact of exchange rate completely since there are differences between the compositions of imports and exports of the country. The data collected from different industries that are affected by exchange rate changes in opposite directions can lead to loss in aggregate data. Thus, in order to fully analyze the effects of exchange rates on terms of trade, it is planned to investigate the existence of co-integration and causality relationship by calculating both net and income sectoral terms of trade in the following study.

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Poland's agricultural budget under the influence of the changed economic policy strategy after 2016

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ABSTRACT

The purpose of the work was to indicate the changes that have taken place in the budget for agriculture in Poland. The year 2016 is important for this study, since it was then that the new strategy of national economic policy came into being. In it, is a transition from a pro-liberal option, which was controlled by money supply, to a pro-social one, which is controlled by budget expenditure. This change has been stimulated by spending restrictions in the national agricultural budget. The research focuses mainly on the last two years (2016-2017), but for comparison, historical data from the year 2010 and earlier is presented. In the article the analysis of structure and dynamics for the examined term was applied. The most important conclusions are that pro-social, nationwide initiatives of budgetary expenditure after 2016 have had a negative impact on the agricultural sector in terms of the expenditure allocated to it; the level of expenditure for the agricultural sector from the national budget is unstable and has been declining since 2016. This could be related to the need to finance a significant increase in spending on social purposes.

Keywords: agricultural, budgetary expenditure, economic policy

INTRODUCTION

The aim of the article is to indicate the changes that took place in the agricultural budget of Poland after 2016, under the influence of the new strategy of national economic policy. It has been assumed that economic policy is driven by the dominance of either money supply (monetary policy) or budget expenditure (fiscal policy). In both cases, actions can be expansionary or restrictive in nature. The article presents the possibilities and consequences of certain choices. When it comes to the agricultural budget of Poland after 2016, we are dealing with a transition from a pro-liberal option (controlled by money supply) to a pro-social one (controlled by budget expenditure), with simultaneous spending restrictions in the national agricultural budget. These reductions are not compensated by the increase in expenditure from the European Funds Budget (EFB). Firstly, the level and share of expenditure on the agricultural sector in the total budget and GDP are analysed in the article, including expenditure on the Agricultural Social Insurance Fund (ASIF) and resources from the EFB. Secondly, we focus more closely on the relations between support for agriculture from national and EU funds.

Theoretical premises for changes in the economic policy

Economic policy consists of key policies through which the state influences the economy by using specific tools and measures to achieve its objectives. It depends on the doctrinal environment (i.e. theory of economics), internal factors that characterise a given country and external factors (processes of integration, globalization) (Gajda, Tarnawska 2009). One of the

models that describes the principles of conducting economic policy is the "pendulum" model, which is a certain idealization of these activities, but which finds its roots in theories of the economic cycle and the need to adjust economic policy in order to slow down or stimulate the economic situation. In practice, it means the alternation of restrictive and expansionary policies. The distinction between these two is presented as the effect of changes in the interest rate and budget deficit (Czyżewski, Poczta, Wawrzyniak 2006). The application of the pendulum principle stems from the need for economic policy to converge with the business cycle, mitigate its negative effects and, most importantly, maintain a decent level of economic growth (Basu and Taylor 1999). At the same time, it shows the logic and consequences of the transition from a more expansionary to restrictive variant, both in the policy of dominant monetary and fiscal elements (Czyżewski A. 2001).

Therefore, assuming that the dominant objective of the economic policy, both monetary (changes in money supply) and fiscal (changes in public expenditure), is to increase the average efficiency of the use of available production factors, it is necessary to indicate four possible variants of the conditions for agricultural production (Table 1). The first refers to the case of expansionary monetary policy and the characteristic decrease in real interest rates, which is favourable to the economy, but may result in inflationary processes - prices of both agricultural products and means of production will rise. In the absence of adjustments made by the government, this may cause price scissors to widen, due to higher prices and income elasticity of demand for non-agricultural products and quicker possibilities of return on capital invested outside agriculture. This phenomenon will be accompanied initially by a tendency to depreciate the domestic currency exchange rate, as long as the favourable price effects of changes in terms of trade in agricultural products (increased exports) prevail over the volume effects. The situation will last until further monetary expansion threatens the stability of inflation processes. The exact opposite mechanisms would apply in the case of a restrictive monetary policy (Czyżewski A. 2001). On the other hand, a different, non-alternative variant is the impact of fiscal policy, where in the case of expansion, government expenditure, including support for agricultural production and income, may result in an increase in the budget deficit, which may result in an increase in agricultural income and prices in the short term. The expansionary fiscal policy may also manifest itself in support for loans for agriculture, an increase in demand for means of agricultural production and, consequently, an increase in total demand, including demand for agricultural products. Under these macroeconomic conditions, this may trigger a price-scissor-widening mechanism (due to different price and yield elasticities of demand). This may involve inflation, and the need to raise interest rates, which will be conducive to the appreciation of the domestic currency. Export prices will fall relatively, the price effect of terms of trade will deteriorate. The exact opposite mechanisms would apply in the case of a restrictive fiscal policy, which could create good conditions for the structural transformations induced in this way within the supported sector, and lead to increased income, which could be real in nature (Czyżewski 2001).

Table 1: Economic conditions for agricultural production under different monetary and fiscal policies

Source: own study, based on (Cramer and Jensen 1992)

| Specification | Monetary policy | | Fiscal policy | |
|---------------------------------------|-----------------|-------------|---------------|-------------|
| | expansionary | restrictive | expansionary | restrictive |
| Domestic agricultural prices | ↑ | ↓ | ↑ | ↓ |
| Prices for agricultural inputs | ↑ | ↓ | ↑ | ↓ |

| Price scissors | ↑ (widening) | ↓ (narrowing) | ↑ (widening) | ↓ (narrowing) |
|--------------------|--------------|---------------|--------------|---------------|
| Terms of trade | ↑ | ↓ | ↓ | ↑ |
| Real interest rate | ↓ | ↑ | ↑ | ↓ |
| Exchange rate | ↓ | ↑ | ↑ | ↓ |

↑ increase, ↓ decrease

In the literature exist analyses of the “pendulum principle” in various countries (Germany, France, the Benelux countries, Italy, Russia or Poland) in a relatively long period (Czyżewski, Poczta and Wawrzyniak 2006; Czyżewski and Kułyk 2013). On the basis of these observations, we can assume that since 2016 Poland has been dealing with a strategic change of economic option from pro-liberal to pro-social.

Public expenditure on the agricultural sector in Poland after 2016. Dynamics and basic relations

Overall, spending on agriculture, rural development and agricultural markets, together with ASIF and the EFB, has fallen by 2.32% over the past two years (after 2016), when Poland's general economic policy changed, with a real increase in total budget expenditure of nearly 1% in 2018 and a planned GDP growth of nearly 4%. This is a significant decrease in the position of the state agricultural budget in the hierarchy of budget expenditure in the national economy. It should be added that in 2018 this expenditure accounts for 12.37% of the state budget expenditure, and in 2017 it accounted for 12.58%, which is 0.21 p.p. more. In 2016, it was 14.59% higher than in 2018. It is also worth noting that in 2018 the share of the state's agricultural budget (including ASIF and EFB) in GDP will be 2.37%, compared to 2.47% in 2017 and 2.89% in 2016. In this case, the decrease in the share over the last two years is 0.52 p.p.. This is caused, among other things, by the reduction in expenditure in the national agricultural budget for agriculture, rural development and agricultural markets (by PLN 892.6 million in 2018), as well as in the ASIF budget (PLN 880.96 million less). It should therefore be emphasized that the successive reduction of the share of the Polish agricultural budget in the general state budget, as well as in Poland's GDP in 2018, is taking place despite the real increase in the EFB by 3.03% (nominally by ca. PLN 1.28 billion). Had it not been for this increase, the depreciation of the state agricultural budget in 2018 would have been much higher. It is also worrying that the decreasing share of spending on the agricultural sector in Poland (together with ASIF) is no exception, and that this phenomenon has been going on since at least 2010. In particular, in 2018, expenditure on all parts of the national agricultural budget, with the exception of expenditure on agriculture and hunting, is falling in real terms. The decline affects, among others, expenditure on rural development, agricultural markets, regional budgets, special provisions, expenditure planned in other parts of the agriculture budget and ASIF, where the amounts are in real terms lower than in 2018. The budgetary situation in 2018 is being improved, as has been pointed out above, only by the increasing expenditure from the EFB (which are also EU funds).

Total expenditure from the national budget for agriculture, rural development and agricultural markets, together with regional budgets, special provisions and expenditure planned in other parts of the budget, will amount to PLN 8.79 billion and will be 11.51% lower in real terms than in 2017 (in 2016 it was lower in real terms by 8.6% than in 2015). This represents 2.21% of state budget expenditure in 2018, without ASIF and EFB (Czyżewski, Matuszczak 2015b). Thus, in 2018, this share decreased by 0.31 p.p. compared to 2017 and the

decline over the last eight years was 2.2 p.p. It means the share almost two times lower than in the previous year.

Including budget expenditure on ASIF, the total amount of expenditure has increased to PLN 26.73 billion. Therefore, in real terms 5.49% less than in 2017, and the successive decrease in this amount from 1 to 5% has been maintained annually since 2010. If one considers expenditure on ASIF, the share of the agricultural budget in national budget expenditure amounts to 6.73%, which is 0.45 p.p. less than in 2017. It is worth remembering that this year it was 0.05 p.p. lower than in 2016. In 2016, it was lower by 0.54 p.p., in 2015 by 0.66 p.p. The situation in this respect is therefore deteriorating again in 2018, in relative terms, in comparison with both 2017 and 2016.

When it comes to the share of total expenditure on the sector in GDP (excluding ASIF and EFB), it will amount to 0.43% in 2018 (see Fig. 1 for previous years.). Thus, the share of GDP is the lowest for eight years and is equal that of 2010. The above comparisons demonstrate that the national agricultural budget as a share of GDP has been gradually decreasing for eight years, which shows that the agricultural sector is not benefiting proportionately from the effects of GDP growth in Poland (Czyżewski, Matuszczak 2013).

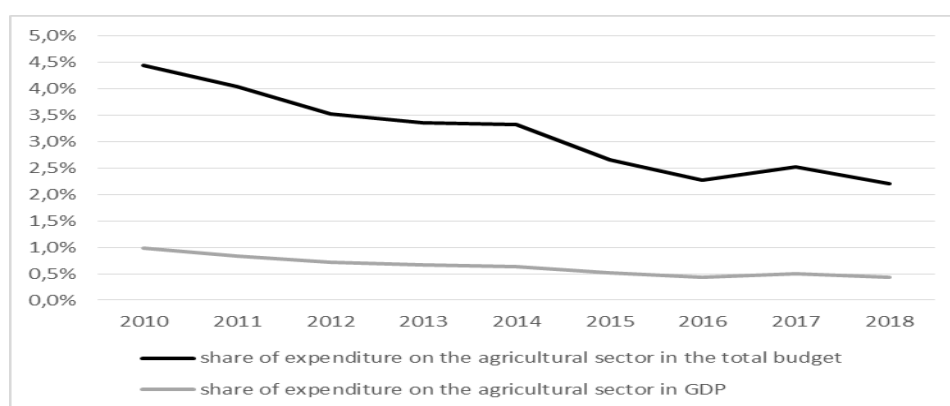


Figure 1: Share of expenditure on the agricultural sector in total budget expenditure and GDP

Source: own study, based on The Draft Budget for years 2010-2017 and Explanation for the Budgets for the years 2010-2018 (<http://www.mf.gov.pl>)

If it were not for the financial support from the EFB (also decreasing), the sectoral disproportions in the distribution of funds from national income would clearly increase. Part of this can be attributed to the adjustment to current conditions triggered by the need for financial constraints, due to the current social expenditure of the state, but the scale of the reduction is nevertheless too large and disproportionate, especially given the successive increase in GDP in recent years (more than 4% in 2017). A closer look at the situation of the Polish agricultural budget in 2018 is illustrated by the high asymmetry in the dynamics of expenditure. Only 6 elements of the budget show an increase in real expenditure, and as much as 25 a decrease, but only 9 of them fall within the area of assumed inflation (2.3%), while 16 are much higher, while in 12 cases the annual decreases in planned expenditure are usually within the range of 24% to 6%. The increase in planned expenditure in 2018 concerns only four items, in particular research and development and food quality control. It can be understood that in the situation of such a pro-social budget, there is a quite natural willingness to introduce financial

restrictions in many areas, however, it must be recognised that the scale of the reduction in financial expenditure on the agricultural sector in the last two years is too large and disproportionate, especially when one considers the aforementioned successive increase in the level of GDP in the last two years. Real improvement in the living conditions of the rural population in the context of a pro-social state policy since 2016 should be permanent and the social achievements of programmes, such as 500+, should not be accompanied by a reduction of expenditure in this budget.

The interdependence of the national agricultural budget and the EFB

The analysis of the share of expenditure on the agricultural sector in the national budget shows that integration with the EU was crucial for the changes in the trends in the perception of its financing by decision-makers. Until 2003, opinions on budget acts (Czyżewski 1997-2016) were rather pessimistic. In fact, since the beginning of the economic transformation in Poland, it has been difficult to recognise that agriculture was a priority in government policy (Czyżewski, Matuszczak 2014a). Poland's membership in the EU is reflected in the public expenditure on co-financing and pre-financing, planned in the EFB (Czyżewski, Matuszczak 2014b). As part of the expenditure from this budget, the draft budget for 2018 assumes total spending of nearly PLN 21.5 billion, which is 4.03% higher in real terms than in 2017, when the Agricultural EFB forecasted spending equal to PLN 20.2 billion. The general spending planned in Poland's agricultural budget will amount to PLN 48.74 billion, which means that in 2018 they will be lower in real terms (including the inflation rate) by 1.63% than in 2017, when they were as much as 11.24% lower than in 2016, when it amounted to PLN 53.76 billion. Thus, the share of expenditure from the EFB in 2018 will be 45.16%, compared to 42.97% in 2017 and 50.44% in 2016.

If we take into account the refinanced funds from the EU, allocated for expenditure in the EFB in 2018, i.e. for agriculture, rural development, agricultural markets, specific reserves in the amount of PLN 21.5 billion, they constitute 33.07% of the funds transferred to Poland by the EU (in 2017 – 36.12%, in 2016 – 43.27%). The total amount of EU funds received by Poland in 2018 will amount to PLN 64.75 billion and will be higher by PLN 8.86 billion than in 2017 (in 2016 – PLN 61.6 billion, in 2015 – PLN 79.37 billion). The above shows that the CAP is gradually losing its dominant position among EU programmes implemented in Poland, mainly for programmes implemented with the participation of Structural Funds and the Cohesion Fund.

However, the benefits to the Polish agricultural sector also persists in 2018, although they are decreasing. It can be estimated that for each PLN of Poland's contribution to the EU's general budget in 2018, PLN 3.30 is transferred back to Poland, of which PLN 1.09 (33.07%) will be allocated to the objectives and tasks of the agricultural budget in Poland (see Fig.2 for previous years).

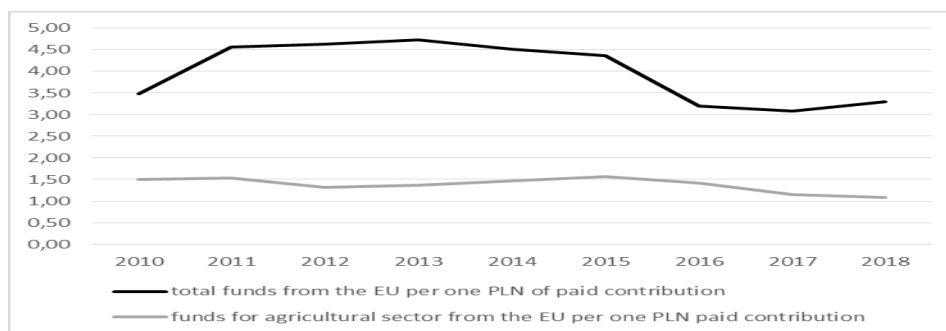


Figure 2: EU transfers to Poland, including agricultural funds, per one PLN of paid contribution (in PLN)

Source: as in Fig.1.

Two conclusions can be drawn from the above. Firstly, agriculture and rural areas in Poland in 2018 will also be net beneficiaries of the process of Poland's integration with EU structures, but to a significantly lesser extent than in previous years. Moreover, the decrease in the level of benefits from PLN 1.41 in 2016 to PLN 1.09 in 2018, per one PLN of contributions to the EU budget, that is by ca. PLN 0.32, and ca. 30%, should be considered as large, the largest in the last 9 years. Secondly, the benefits to the agricultural sector in Poland coming from the EU are decreasing, because a long-term trend is observed in the decreasing total amount of financial resources granted by the EU to Poland, although 2018 as compared to 2017 does not confirm this. It should also be noted that the relative share of the EFB in the Agricultural Budget of Poland in 2018 amounted to 45.16% and was 2.19% higher than in 2017. Thus, in this case the situation with the decreasing share of the Agricultural Budget of European Funds in the total amount of EU funds transferred by the EU to Poland in 2018 did not repeat.

The problem of the Agricultural Social Insurance Fund (ASIF)

A special place in the structure of expenditure in the national agricultural budgets is occupied by the Agricultural Social Insurance Fund (ASIF) - firstly, it is nominally the largest expenditure, and secondly, it is subject to significant changes (Czyżewski, Matuszczak 2015a). The amount of budget resources spent on ASIF (socially determined expenditure) will reach the level of PLN 17.94 billion in 2018. This will be 2.24% lower in real terms than in 2017. At the same time, it is equal to 204% (19 p.p. higher than in 2017), and so more than double, the expenditure planned for agriculture, rural development and agricultural markets in the national agricultural budget in 2018 (see Fig.3 for previous years). This means that there has been a return to the growing trend of spending on ASIF, in the context of very moderate spending on agriculture, rural development and agricultural markets.

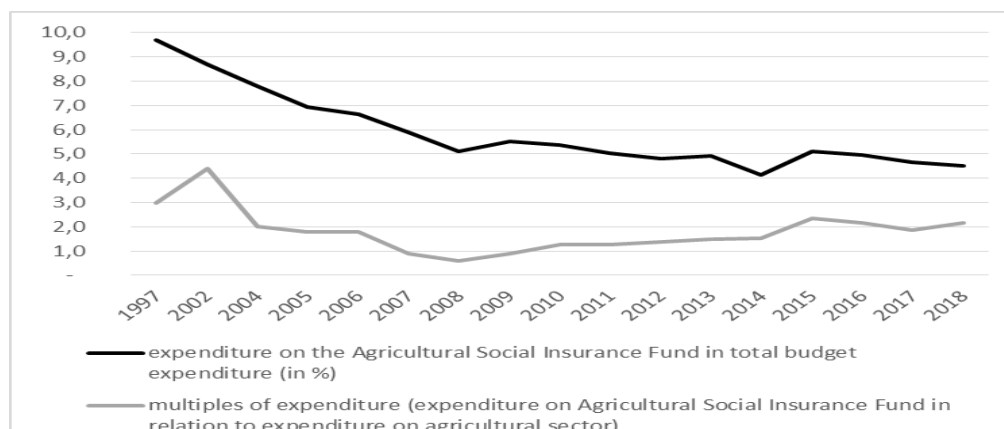


Figure 3: Expenditure on the Agricultural Social Insurance Fund in total budget expenditure (in%) and in relation to expenditure on the agricultural sector

Source: as in Fig.1

It is worth noting here that the average expenditure on ASIF in relation to national budget expenditure on the agricultural sector in the period 2010-2018 (9 years) is 162%, and so in 2018 this indicator is 40% higher. This leads to the conclusion that the overall cuts in the national agricultural budget has not affected planned spending on ASIF, which can again be considered as complementary to other parts. The legislator could also conclude that this was justified in the context of a significant increase in expenditure from the EFB in 2018. We can observe the share of expenditure on ASIF in total budget expenditure, which over the last 21 years has decreased by 2.2 times (see Fig. 3). The presented data shows also that the role of ASIF in the Polish Agricultural Budget is decreasing relatively in the long run. Thus, it may be assumed that the stimulation of the economic functions of the Polish agricultural budget has been continuing throughout this period. In the years 2010-2016 the volume of expenditure on ASIF increased relatively, while the last two years (2017-2018) brought a real reduction in expenditure of 2-3%.

CONCLUSIONS

To sum up the above, we can say that:

- total spending on agriculture, rural development and agricultural markets, together with ASIF and the EFB, has been declining since the beginning of the change in Poland's economic policy in 2016. In 2018, they amounted to PLN 48.74 billion, 12.37% of the total budget, of which PLN 8.79 billion (2.21% of the total budget) is to be allocated to the agricultural sector (that means agriculture, rural development and agricultural markets, together with regional budgets and specific reserves, as well as expenditure planned in other parts of the budget, excluding ASIF and EFB), PLN 17.94 billion to ASIF (4.52% of the total budget) and PLN 22.01 billion will be allocated to the EFB. Thus, it should be stated that on the basis of the above comparisons, the national agricultural budget has been gradually decreasing for the last 8 years in relation to total budget expenditure and GDP, and thus not taking advantage of the effects of GDP growth in Poland. It should be stressed that the key issue in this case is the financial support from the EFB (also decreasing), which to a certain extent eliminates sectoral disproportions in the distribution of funds from national income;
- the national agricultural budget is gradually decreasing in relation to GDP in Poland. This means that the agricultural sector does not benefit proportionally from the effects of GDP growth (in 2018 about 4%). In the light of the above analysis, it can be concluded that in 2018 this budget is very economical, which also applies to the budget for the regions and special purpose reserves. This is

probably related to the need to finance a significant increase in spending on social purposes, also for the rural population, mostly in the form of the flagship social programme 500+;

- agriculture and rural areas in Poland will also be net beneficiaries of the process of Poland's integration with EU structures in 2018, however to a significantly decreasing extent compared to previous years. In 2016-2018, during the period of strategic change of Poland's economic policy from pro-liberal to pro-social, the decline in EU support for the agricultural sector in Poland was clearly visible;

- when it comes to the budgetary expenditure on ASIF, its share in the total budget expenditure of the state has been gradually declining over a period of twenty years. There are indications that the level of budget expenditure on ASIF is stabilising at a nominal level close to PLN 18 billion per year, while the potential to limit the spending by tightening up the rules of granting benefits are relatively small, and the need to maintain the existing services is obvious, both in terms of level and scale.

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The effectiveness of employees' selection in Slovakia

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ABSTRACT

The shortage of skilled labor and the rising fluctuation of employees in Slovakia have been the most discussed issues of personnel policy in the recent years. Managers need to replace outgoing employees and create a stabilizing environment in enterprises. Based on the uniqueness of each employee, we believe that employee selection and adaptation need to be differentiated by job positions and chosen techniques. One of the causes of termination of employment during the adaptation period is the underestimation of the selection process. The aim of the paper is to present the views of domestic and foreign experts on the efficiency of employee selection, to clarify the reasons for employees' dismissals and to recommend procedures for increasing the efficiency of selection. In an effort to meet the goal of the paper, we conducted a survey of the level of personnel work in 381 enterprises in 2017. We compare the survey results with theoretical knowledge, diagnose processes and indicators that support the personnel stabilization the most.

Keywords: *Fluctuation, Recruitment. Job analysis, Slovak enterprises, Human resources management.*

INTRODUCTION

Human resources are the most important resources in the enterprise down the road for a long-term success. The better the employees of the enterprise, the more competitive the enterprise is. Therefore, the key decisions of HRM include the design of an appropriate strategy and policy of employee selection for vacant positions. There are high financial and time costs associated with the selection of employees. In addition, frequent staff changes can lead to destabilization of the internal business climate and corporate culture. Therefore, enterprises try to minimize undesirable fluctuations. This phenomenon is influenced by a number of external factors such as employment in the region, the labor market and its structure, cooperation with Labor Offices, lack of population qualifications or internal factors, such as a remuneration system, recruitment, adaptation and integration of new employees, working climate and management style. While the first group of factors cannot be affected by management, the second group can be regulated with appropriate settings of personnel activities. Despite the enormous effort and years of experience of managers, fluctuation is a common phenomenon in business practice in almost all the regions and across all the sectors of the economy.

THEORETICAL FRAMEWORK

Fluctuation is undoubtedly one of the most undesirable phenomena in human resources management. It is a big risk, because it brings many losses: loss of expertise, of know-how, of time, it breaks relationships and teams (Tebeian, 2012). Enterprises need to make sure that employees, participating in mission-critical activities, share the acquired process-related knowledge to keep established experience within the organization and optimize its performance in the face of employee fluctuation (Witschel et al., 2010). In Slovakia there are regional disparities in employee fluctuation (Fig. 1). The region of Bratislava belongs to the most expensive regions of Slovakia, it offers the most job opportunities and shows the highest fluctuation rate. A similar situation in terms of fluctuation rates is in the Prešov region, which has the least job opportunities and the lowest wage valuation. While in the Bratislava region the change in employment is affected by a better job offer and/or the possibility of further development, in the Prešov region insufficient wage valuation is the reason for leaving. Employee fluctuation is a reality and a problem not only in Slovakia but also abroad, and varies by industry from 12.2% to 28.6% (Bares, 2017).

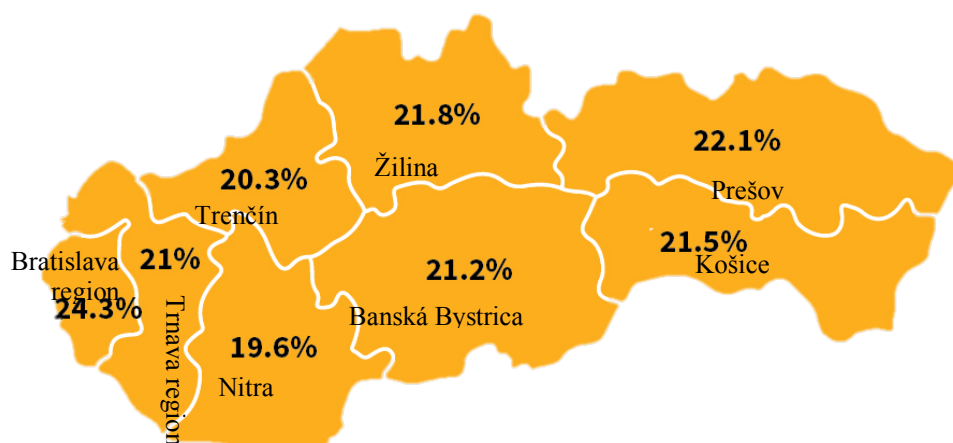


Fig. 1. Fluctuation in Slovak regions
Source: Own processing by Profesia.sk, 2017.

According to the Gallup, a consulting company (Wigert, 2017), it is considered to be tolerable or so-called desirable fluctuation of discontented employees, which is around 10%. Branham (2005) also has a similar view, recommending to look at employee fluctuation by their performance. Negative effects on performance are mainly due to the voluntary fluctuation of employees who are considered to be the top (10%), high performing (20-30%) and reliable employees (40-50%). It is important to stabilize such employees. On the contrary, between 15 and 20% on average are employees who are destabilizing. Sometimes is necessary to terminate their employment. With an insufficient number of employees, enterprises begin to search for new suitable candidates. In the process of selecting employees, the task is to determine which job seekers are the most likely to meet the requirements of the work place, contribute to the harmonization of enterprise's relationships or of the relevant working group, or to improve the working and social climate of the enterprise (Galajdová et al., 2007). The aim of each enterprise is to obtain and ensure suitable and promising employees who will be of a great benefit, especially with their knowledge, work potential and skills, because quality, flexible and loyal employees ensure responsible and professional work for success and enterprise development (Olexová, 2005). An enterprise can gain an advantage in a competitive battle. Similarly to Murdock and Scutt (2015), we believe that the role of managers is to get employees at the minimum cost of such quantity and quality that is needed for efficient operation and future development of the enterprise. The very process of recruiting and selecting is preceded by a thorough analysis of the enterprise's activities, the content of the work, the powers, the responsibilities and the inclusion of the future employee in the existing organizational structure of

the enterprise. According to Lorincová and Giertl (2015), when analyzing jobs, quality information about jobs obtained from multiple sources is very important. The job descriptions differentiated for each job is a result. Only on the basis of this information it is possible to specify the requirements for a person who will fill a vacancy. In addition to knowledge and skills, we also need to take into account other features and assumptions that can help to fulfill his/her potential. An enterprise-wide policy of job analysis is an important source of competitive advantage in its own right, and merits due attention of HR professionals, line managers and top management (Siddique, 2007). Basically, it does not matter whether we look at the analysis of the work from a traditional perspective or from a modern one dominated by a strategic long-term orientation. One of the basic assumptions of a traditional job analysis is that individuals, jobs and the match between them are stable over time. In addition to the assumption of stability, traditional job analysis also assumes that the job in question exists, and that you can literally observe incumbents performing related tasks, or get job-related through other sources such as surveys (Singh, 2008). With the rapid development of information and production technologies and the need to find new, more innovative solutions for increasingly demanding customers, there is a breach of established ties between individual employees and jobs. Rapidly changing organizational structures, flexible forms of work organization, team-based structures, newly created jobs, and increasingly unpredictable future scenarios in organizations have all added immeasurably to job instability (Anderson et al., 2004). Current research and practice suggest that new knowledge, skills, and abilities will be required if jobs are to be effectively and efficiently performed in this dynamic environment (Voskuil, 2005). Consequently, it is necessary to adapt the methods of analyzing work in enterprises of different focus. According to Singh, (2008) strategic job analysis is a necessary step in the evolution of traditional job analysis so that it can meaningfully tackle the emerging needs of contemporary organizations. In our opinion, however, there are areas of business where the traditional approach to work analysis finds its application and justification. We consider it important to approach it with full seriousness because we consider it a basic building block on which other personal activities can be built.

AIM AND METHODOLOGY

The aim of the survey is to identify the causes of employees' fluctuation and employee selection techniques used in selected enterprises in Slovakia. As of December 31st, 2016, 557,758 enterprises (Lukáč, 2017) were active in Slovakia, of which 99.9% were small and medium-sized enterprises, including self-employed people. The number of micro-enterprises with up to 10 employees (97%) predominates. A sample of 381 enterprises, 88% of which are private and 12% from the public sector, was formed deliberately. This decision was influenced by the assertion that larger enterprises are taking greater care of the HRM process, sophisticated procedures and techniques for employee selection and stabilization. The structure of the research sample is fairly balanced by the number of employees. Micro-enterprises are represented by 22.89%; small enterprises with up to 50 employees are represented by 28.95% of respondents, medium enterprises with 51 – 249 employees are represented by 27.11% and large enterprises by 21.05%.

Using questionnaires and attending personal meetings, we received the views of 381 managers and human resources referents. The questionnaire was created both in printed and electronic form and focused on HRM processes. The input assumption for the creation of the sample file has been confirmed. The size of the enterprises corresponds to the professional provision of HRM. In small and micro-enterprises HRM is performed by employees mostly alongside other work (73.42%), HRM is in the competence of one employee (46.58%), with a maximum of two employees (26.84%). Emphasis on HRM increases in enterprises with more employees, in which the personnel work is divided among 5 (5.79%) and more employees (12.11%). The following research issues were the subject of verification in practice:

1. What is the most common problem with HRM?
2. What is the importance of HRM?
3. Which techniques for recruiting and selecting employees have proved their best?

4. What are the reasons for which employees leave and where are the highest fluctuations?
5. Do you record the cost of voluntary fluctuation associated with replacing an outgoing employee?

RESULTS AND DISCUSSION

According to the majority of respondents (77.16%), the lack of qualified job seekers and employees willing and able to work is the problem. Most of the reservations were about poor workplace discipline and workplace communications, falling reliability and responsibility, employee dissatisfaction with wage level, increasing employees' demands for greater flexibility at work, new information technology capabilities, and slow promotions. Working dissatisfaction is negatively reflected in the performance of the enterprise, the quality of the product being provided and the increasing fluctuation.

Respondents have included wages and employee benefits (88.5%), interesting work (63.4%), job security (47.8%) and public praise (35.3%) among the decisive factors. These views were presented by 78% of human resource managers and referents who make exit interviews with outgoing employees and monitor the reasons and the rate of fluctuation.

We were examining the voluntary fluctuation, therefore we divided the reasons for leaving the job into four groups, in which respondents should identify the three most important factors they consider to be important for a job change. Of the working factors, they attributed the highest weight to unsatisfactory working conditions, uninteresting and boring work and dissatisfaction with working time. In the group of organizational factors, low wage valuation is significant at termination of employment, followed by poor interpersonal relationships, leadership and management style, dissatisfaction with work motivation, and inadequate employee benefits. In the group of personal factors, there is a lack of opportunities for self-realization and a better offer from another company, even outside the main field of study. Working abroad is considered by respondents to be a minor factor. Personal factors include individual approach to work, their internal evaluation of so-called better job offers. In a more detailed study of this group of respondents, we identified 5 employers' characteristics with a better job offer: wage reward and employee benefits (1), strong brand name (2), good reputation (3), interpersonal relationships (4) and providing a quality product (5).

We confronted our findings with the results of a nationwide survey from 2017 (<https://profesia.pravda.sk>) involving 11,713 respondents with the prevalence of employees aged 24 – 44 (68%). Among the main motivating factors for changing work and leaving the job were:

1. Low wage reward (37%),
2. Insufficient conditions for development and self-realization (23%),
3. Style of managers' work (15%),
4. Bad working conditions (13.5%),
5. Lack of free time (12%).

The results of two investigations are basically the same, and this led us to the need to determine the rate of fluctuation. Based on the outcomes of sociological inquiry, the fluctuation rate in Slovakia is around 25%. The lowest fluctuation is in textile, leather and clothing industry (15.2%) and the highest in tourism and hotel industry (30.1%). On average, the entire workforce changes in three years in marketing and advertising (32.4%), translation and interpretation (31.5%), the media (29.4%) and law (28%). Differences in employee fluctuation are also in terms of age and business location in the regions. A young generation of employees – millennials are more likely to change jobs (fluctuation above 35%), while the generation over 40 is more stable and the rate of fluctuation is up to 10%. The differences in length of employment range from 1 month to 17 years.

The presented results have led us to verify the importance of HRM processes, their use and transparency. Employers who apply different rules and grant exceptions to HRM and keep low-performing employees, contribute negatively to workplace morale and discipline at the workplace. The survey of the importance of HRM processes has shown that the most used and important processes are selection and recruitment, training and evaluation (in %):

| | |
|---|-------|
| Selection of employees | 90.79 |
| Recruitment and adaptation | 86.58 |
| Training and development | 82.63 |
| Employee welfare | 79.47 |
| Evaluation and management of work performance | 79.21 |
| Personnel administration | 78.16 |
| Optimization and planning the number of employees | 71.84 |

Conceptual questions (49.74%), job analysis (56.05%), control (41.58%), support for talented employees (17.89%) are less concerned. We consider employee selection and adaptation as processes that can minimize the fluctuation. An important decision of the company's management is the choice of appropriate recruitment and selection techniques. The efficiency of other human resource management processes in many ways depends on the professionalism of employee selection and adaptation to work and social environment of an enterprise. According to the survey, the most popular way of getting jobseekers is the electronic advertisement and using the internet portal (63.16%), through friends and acquaintances (59.74%), direct addressing (34.24%), printed advertisement (32.89%). There are 28.16% of applicants from the Office of Labor of Social Affairs and Family, and 18.42% of respondents use the services of recruitment agencies and headhunters.

An analysis of the jobseeker's dossier is the basis of each selection procedure. In practice, it is used by 80% of respondents. Among the others, unstructured (47.37%) and structured interviews (43.68%), expertise testing (34.47%), competence testing (31.32%), personality testing (16.32%), intelligence testing (8.16%) are used. Assessment center, the diagnostic method of complex evaluation of the selection process, is used only in 6.32% of enterprises. Even the assessment center and testing have the highest validation of selection techniques, they are used by the smallest number of enterprises surveyed. Respondents critically pointed out the need for improvement in employee selection techniques and change in adaptation process. In the case when needed to fill a job, especially during the season, enterprises recruit employees without complicated competitions and the statutory adaptation period. The reason is to ensure the continuous operation mainly in shops, services and production. As a result of ineffective choice of selection techniques, the termination of employment in the adaptation period is 38% of the number of employees recruited in 2017.

An employee on a job expects a work-life balance, remuneration, social norms and relationships and getting some position. Conflict of expectation can occur if he/she has not been sufficiently informed about the job description in the process of recruiting and adapting. Each of the enterprises surveyed responded to having processed job descriptions. We have verified their content and structure. The level of processing is different, as evidenced by the fact that 83.16% of the respondents stated that they have only an overview of job responsibilities, 78.95% also defines the purpose of work, 72.37% responsibility and job performance requirements 58.16%. In the organizational structure of enterprises with a total number of jobs of up to 50, 28.42% of enterprises have real job descriptions and other HRM documents, with a structure ranging from 91 to 100 there is 48.68% of such respondents. Besides, the specification of the requirements for employees and the knowledge of the job description are the basic starting point for the effectiveness of each selection procedure.

Repeated selections due to employees' departure increase enterprise costs and reduce performance. Respondents were asked to evaluate the effectiveness of the selection. None of the enterprises evaluate the effectiveness of the selection. Around 11% of respondents said they were recording the cost of employee search and adaptation but did not investigate the validity and reliability of chosen selection techniques. The cost conversion per applicant documents the utility, validity and reliability

of the selection. According to the survey (Wilson, 2017), a mistaken choice leads to early departure of an employee who is the employer's half to two-thirds of his annual salary. The sum does not include the costs of subsequent search and incorporation of another potential employee, which results in the total cost of misleading and repeating the new selection being at least 1.5 times the annual salary. We consider the outcome of the selection to be successful if the selected and accepted applicant is a benefit to the enterprise and has not departed in the adaptation process.

A prerequisite for examining the effectiveness of employee selection is to record all activities related to the recruitment, selection and adaptation of the recruited employee. It is recommended for enterprises to monitor the costs of administrative activities, offering the job within the company and in the external labor market, organizing the selection, acceptance and adaptation process, including the costs of employee fluctuations due to the selection of the wrong person. We propose the following indicators to evaluate the effectiveness of employee selection:

- variability and reliability of chosen selection methods,
- the cost of the recruiting and adaptation process collectively for an enterprise, by job positions, selection techniques,
- the performance of the persons involved in the selection of new employees during the recruiting process,
- the number of applications for a job,
- the number of job seekers invited to work in comparison with the number of applications,
- the number of registered job applicants in comparison with the number of participants in the selection process,
- the amount of time elapsed since the start of the search, recruitment and selection,
- termination of employment in the adaptation process,
- the number of employees remaining in employment after the adaptation,
- the rate of employee fluctuation by jobs,
- the stability index and survival rate.

CONCLUSION

We have reached the following conclusions by studying the literary research and by the HRM survey. Employee movement is considered to be a natural part of the internal and external labor market and each employee has the right to choose. The reason for the change of employment is the desire to maximize benefits or satisfaction at work, higher salary, career development or other employee benefits.

1. If the interest of managers is an accepted strategy and a tactic to maintain competent and willing employees, they need to know the reasons for leaving and gradually create the environment in which people want to work.
2. The vacant posts should not be filled by employees who are not satisfied with work and who do not fulfill the specific prerequisites for their performance. Selection of employees should be done by techniques that guarantee validity and reliability due to the job description and the employee specification.
3. The adaptation process can be used for forming recruited employees not only for work and jobs, but also for corporate culture. Give them a sense of good start, train and set them up in a working team. A newly hired employee must feel that he/she is a part of a business, work and takes responsibility for his/her behavior.
4. Employees who have identified with an enterprise should be encouraged to develop, evaluated and rewarded according to the results of their work. Employees who do not contribute to the growth of corporate values should be released from employment.
5. In theory and in professional practice there is no universal instruction or a way to keep the right employees. Like Deery (2008), Brandham (2009), Yamamoto (2011) and others, among the processes that contribute to the stabilization of high-performing and decisive employees for the enterprise, we provide incentives and opportunities for success, talent development, succession

- management and career development, employee benefits, flexible work, open communication, motivating working environment, transparent performance pay, appreciation and recognition of work, respect, creative workplace atmosphere and competence of managers for work.
- Evidence of HRM processes associated with reporting the cost of recruiting, selecting, adapting a new employee, and replacing an outgoing employee is a prerequisite for assessing the effectiveness of the selection and pointing to wasting funds in a case of mistaken choice.

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Digital Entrepreneurship as a Means of Integration of Immigrants and Asylum Seekers into Labour Market in Baltic Countries

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ABSTRACT

As European countries face huge challenges seeking to support immigrants and asylum seekers' socio-economic inclusion, some innovative means of fostering their integration into labour markets as a factor of economic self-sufficiency, should be developed in the cooperation of research, education and business sectors. The aim of the article is to disclose the relevance of the digital entrepreneurship as a new competence of immigrants and asylum seekers with respect to their needs for successful integration into the socio-economic situation of a host country. The empirical evidence received proves that Baltic countries are highly interested in the effective ways of the integration of immigrants and asylum seekers into labour market. As the development of ICT prompts new ways for business development (one of the ways is digital entrepreneurship), the educational programmes for target groups of adults should appear in order to fill in the gap in knowledge and skills. However, at present, there are no specific programmes for immigrants and asylum seekers in the field of digital entrepreneurship in partner countries.

Keywords: Immigrants and asylum seekers, Digital entrepreneurship, Integration into labour market.

INTRODUCTION

As countries in Europe and beyond have faced a large influx of immigrants and asylum seekers, social and integration services have to take the immediate response and to provide sufficient support to integrate newcomers into the host society and get them on a path to economic self-sufficiency. The investments in labor market integration policies are especially compelling in countries facing demographic

decline and skills shortages. Baltic countries face unbalance in their labour markets. On the one hand, there is unemployment (Estonia – 7.0%, Latvia – 9%, Lithuania – 7.5%, Eurostat 2017). On the other hand, many industries, in particular in the field of ICT, experience a shortage of skilled workforce. Another tendency is that immigrants in these countries continue to face great difficulties in finding employment, and are also more likely to be found working on short-term, low-paid jobs which fail to fulfil their skills potential, moreover, entrepreneurial capabilities of immigrants are not sufficiently developed (Eurofund, 2017). Given the fact that immigrants and asylum seekers’ employment potential in European countries is rather low (report of Migration Policy Institute, 2017) the new ways of integration should be developed especially those of fostering entrepreneurial competence. Advances in digitisation and developments in ICTs create opportunities for new types of entrepreneurial activities. One such type of entrepreneurial activity is digital entrepreneurship, defined as a new business creation opportunity generated by ICTs – internet, mobile technology, social computing and digital platforms. Digital entrepreneurship is supposed to become in future one of the opportunities in promoting the successful integration of immigrants and asylum seekers into labour market. Therefore, by supporting the development of entrepreneurship as an integral part of adult education, and by modelling new methods of combining new digital technologies, entrepreneurship education in Baltic countries it is intended to help both immigrants and asylum seekers to acquire relevant competence for successful integration into labour markets.

The aim of the article is to disclose the relevance of the digital entrepreneurship as a new competence of immigrants and asylum seekers with respect to their needs for successful integration into the socio-economic situation of a host country.

THEORETICAL ANALYSIS

Advances in digitisation and developments in information and communication technologies (ICTs) is changing the international business landscape, transforming business practices and creating opportunities for new types of entrepreneurial activities. One such type of entrepreneurial activity is digital entrepreneurship, defined as a new business creation opportunity generated by ICTs – internet, mobile technology, social computing and digital platforms (Davidson, Vaast, 2010).

Digital entrepreneurship is defined as a practice of pursuing “new venture opportunities presented by new media and internet technologies” (Davidson, Vaast, 2010). It is similar to traditional entrepreneurship in the sense that “digital ventures aim at generating a financial profit and are directly inscribed into the economic realm, such as creation of a new company or commercialization of an innovation” (Davidson, Vaast, 2010). In digital entrepreneurship “some or all of the entrepreneurial venture takes place digitally instead of in more traditional formats” (Hair et al, 2012). Digital enterprises are different from traditional entrepreneurial ventures because they have different business models and can pursue their products, marketing and distribution activities using digital platforms.

As stated by research, digital entrepreneurship is supposed to become one of the most effective ways for immigrants and asylum seekers to integrate into labour markets, because it is not directly related to their qualifications or language skills that usually limits their employment capacity (Eurostat, 2017).

The concept of “integration” with respect to immigrants can take on a number of meanings (Venturini, Villosio, 2002). At one end of the spectrum is the notion of an economic/social convergence between the immigrant and native population with respect to a number of statistical measures, such as the unemployment rate, the employment / population ratio, average earnings, school achievement, etc. At the other end is the much broader notion of integration as assimilation, i.e. acceptance of, and behaviour in accordance with, host country values and beliefs, including similarity of economic and social outcomes. This study will limit itself to integration into the labour market, by which is meant that gradually, over time, immigrants will tend to show the same range of labour market outcomes as the native population. Integration into the labour market does not necessarily guarantee social integration, it is certainly a major step with respect to immigrants’ being able to function as autonomous citizens in the host country and with respect to ensuring both acceptance of immigration by the host country population and the sustainability of migration policy over the long term. Labour market integration is arguably the single most important thing that can be done to contribute to the integration of immigrants, in whatever way this term is defined (Lematre, 2007).

There are barriers that derive from the immigrants and asylum seekers’ status and from the situation in the local labour market that are common to all immigrants:

- Competition (Venturini, Villosio, 2002),
- Problems deriving from the macro-economic environment: trough of production or crisis in the labor market (Birjandian, 2004),
- Lack of social networks in the host country (Heilbrunn, Kushnirovich, 2008),
- Lack of experience in the host country (Birjandian, 2004),
- Differences in mentality (Birjandian, 2004; Heilbrunn; Kushnirovich, 2007).
- Lack of adequate work because of host country's labour market structure (Kogan, 2007),
- Language problems (Valenzuela, 2000).

The competitiveness of immigrants and asylum seekers in the Baltic countries should be strengthened by combining the development of adult educators' digital competence and entrepreneurship in adult education, and by creating the necessary methods and partnerships between education, business and non-profit sector and development of innovative training programme for adult educators’ competence development. By supporting the development of entrepreneurship as an integral part of adult education, and by modelling new methods of combining new digital technologies, entrepreneurship education and involvement of companies, it would be possible to help both immigrants, asylum seekers, educators, trainers, teachers,

researchers and entrepreneurs acquire relevant competences and frameworks for cooperation.

EMPIRICAL STUDY

The present part of the contribution demonstrates the design of the empirical study, results of the empirical study and findings of the study.

Design of the Case Study

The empirical study has been carried out in the period between 2017 10 – 2018 01, by project “Adult educators' competence training for development of immigrants and asylum seekers' digital entrepreneurship“ (funded for Nordplus Adult programme) team. Project partners from Lithuania, Latvia and Estonia have carried out the research of labour market needs with regards to integration of immigrants and asylum seekers, and demands for training programmes. The aim of the research was to justify the demand for adult educators' training programme in the development of immigrants and asylum seekers' digital entrepreneurship competence. Each country has surveyed 10 immigrants and/or asylum seekers, and 3 representatives of labour markets' training centers.

Respondents' cultural and educational experience emphasized the significance of each participant's opinion on research question (Luka, Ludborza, Maslo, 2009) within the present empirical study. It should be noted that opinion is determined as individual's view based on awareness and attitudes (Lūka, 2007). The group of research participants was considered to be homogeneous.

The exploratory type of the comparative study (Phillips, 2006) was applied within the present empirical study. The exploratory type of the comparative study aims to generate new hypotheses and questions. The exploratory methodology proceeds (Phillips, 2006):

- ‘conceptualisation’ in Phase 1,
- detailed description of educational phenomena in the countries to be investigated features in Phase 2,
- the data collection in Phase 3,
- explanation through the development of hypotheses in Phase 4,
- re-consideration of the initial questions and application of the findings to other situations in Phase 5.

The method of data collection was interview in a written form (Mayring, 2004).

The interpretive paradigm was used in the empirical study. The interpretive paradigm aims to understand other cultures, from the inside through the use of ethnographic methods such as informal interviewing and participant observation, and establishment of ethically sound relationships (Mayring, 2004). The interpretative paradigm creates an environment for the development of any individual and helps them to develop their potential (Lūka, 2008, 52). The core of this paradigm is human experience, people's mutual everyday interaction that tends

to understand the subjectivity of human experience (Lūka, 2007). The paradigm is aimed at understanding people’s activity, how a certain activity is exposed in a certain environment, time, conditions, i.e., how it is exposed in a certain socio-cultural context (Lūka, 2007). Thus, the interpretative paradigm is oriented towards one’s conscious activity, and it is future-oriented. Interpretative paradigm is characterized by the researcher’s practical interest in the research question. The researcher is the interpreter.

After the answers were received the content analysis has been carried out. Informants’ answers of a similar meaning were combined to so called categories. In other words, similar opinions were joined under generalized label. After qualitative research procedure there appeared a possibility to calculate the frequencies of categories that show the distribution of separate opinions in the objective population. Such a calculation empowered to find out dominating and uncommon opinions.

Results of the Case Study

The analysis of immigrants and asylum seekers’ interviews. Having generalized informants’ answers the following tendencies were disclosed (see table 1).

Table 1

Immigrants and asylum seekers’ interview results

| Question | Lithuania (N=10) | Latvia (N=10) | Estonia (N=10) |
|---|--|--|--|
| What do you consider to be the most important needs of immigrants and asylum seekers with regards to socio-economic situation of a host country? | <ul style="list-style-type: none"> - Understanding of the lifestyle of a country (8) - Support in education, employment, healthcare, etc. (7) - Immediate employment (5) | <ul style="list-style-type: none"> - Socio-cultural adaptation (9) - Integration to labour market (8) - Education (8) | <ul style="list-style-type: none"> - Employment (10) - System of benefits and allowances (9) - Healthcare (8) - Support system (8) |
| Please identify specific barriers faced by immigrants and asylum seekers, who are intending to integrate into labour market, in a host country (except for language barrier)? | <ul style="list-style-type: none"> - Lack of informational support (6) - Lack of free work places (4) - Low income work (4) - Lack of relevant training programmes (3) | <ul style="list-style-type: none"> - Low-paid job not related to actual qualification (7) - Lack of support how to integrate into social-economic life (7) | <ul style="list-style-type: none"> - Economic downturn (7) - Discrimination against immigrants in layoff (7) - Non-relevant training programmes (4) |
| What are the most important changes required for immigrants and asylum seekers’ successful integration into the labour market in a host country? | <ul style="list-style-type: none"> - Integration support system (9) - System of daily allowances and allocation (8) | <ul style="list-style-type: none"> - Quality education and support (8) - Recognition of qualifications (6) | <ul style="list-style-type: none"> - The system of conversion of foreign educational qualifications (9) |

| | | | |
|---|--|---|---|
| <p>What are the changes immigrants and asylum seekers are not willing to do in a host country?</p> | <ul style="list-style-type: none"> - <i>Language learning (10)</i> - <i>Obtaining new qualifications (8)</i> | <ul style="list-style-type: none"> - <i>Integration into labour market (6)</i> - <i>Entrepreneurship (5)</i> | <ul style="list-style-type: none"> - <i>Country language instructions (8)</i> - <i>Self-directed integration, career planning (5)</i> |
| <p>How you would describe the integration system into labour market (for legal voluntary immigrants and asylum seekers) in a host country?</p> | <ul style="list-style-type: none"> - <i>Not satisfactory, there is a lack of assistance and counselling (7)</i> - <i>Does not comply with the needs of immigrants (6)</i> | <ul style="list-style-type: none"> - <i>Not satisfactory, lack of support and mentorship (7)</i> - <i>Lack of mediation between labour market offices and employers (6)</i> | <ul style="list-style-type: none"> - <i>Lack of preparation to transition to labour market (7)</i> - <i>No assessment if immigrants are ready for insertion into labour markets (4)</i> |
| <p>Please indicate what specific needs (except for language barrier) immigrants and asylum seekers have in obtaining access to education and training. What specific steps have been taken to address these needs?</p> | <ul style="list-style-type: none"> - <i>Under qualifying the original qualifications (8)</i> - <i>Nobody carries out needs analysis of immigrants and asylum seekers (8)</i> - <i>Possibility to choose the relevant training programme (7)</i> | <ul style="list-style-type: none"> - <i>Recognition of gained education and qualifications (9)</i> - <i>Variety of training programmes in foreign languages (7)</i> | <ul style="list-style-type: none"> - <i>Professional counselling (8)</i> - <i>Counselling on career perspectives (5)</i> |
| <p>Please indicate examples of practices that have proven successful to facilitate the inclusion of immigrants and asylum seekers into the host country's socio-economical system</p> | <ul style="list-style-type: none"> - <i>Address the needs of job-seeking immigrants and asylum seekers (9)</i> | <ul style="list-style-type: none"> - <i>Refugees' support centres that provide assistance in adaptation and integration (10)</i> | <ul style="list-style-type: none"> - <i>Guidance to employers how to work with immigrants and asylum seekers (7)</i> |
| <p>Which institutional and organizational services would be important for successful integration of immigrants and asylum seekers into labour market?</p> | <ul style="list-style-type: none"> - <i>Vocational counselling (8)</i> - <i>Psychological counselling (5)</i> - <i>Vocational training or re-training (5)</i> | <ul style="list-style-type: none"> - <i>Information about schools, universities, colleges, professional training centres (9)</i> | <ul style="list-style-type: none"> - <i>Planning individual professional activity (7)</i> |
| <p>How do immigrants and asylum seekers seek for information about host countries labour markets, employers, etc?</p> | <ul style="list-style-type: none"> - <i>Mediation between immigrants and employers (8)</i> | <ul style="list-style-type: none"> - <i>Information should be provided by responsible organisations such as migration departments etc. (8)</i> | <ul style="list-style-type: none"> - <i>Social assistance (7)</i> |

The analysis of immigrants and asylum seekers' interview answers shows that

labour market integration of immigrants and asylum seekers in Baltic countries has a slower start but subsequently “catch up” with other non-economic entry categories. But, immigrants and asylum seekers do not reach the same level of labour market integration as natives. That might happen due to the following reasons:

- formal qualifications of immigrants and asylum seekers should be recognised by labour market office as well as potential employers. The system of converse of qualifications according to national standards should be developed. The recognition of qualifications can clearly be a significant factor in hiring decisions and in determining remuneration of workers’.
- socio-economic support (vocational counselling, mediation between employers and immigrants and asylum seekers, etc.) should be provided. This presupposes knowledge of the host country language, including knowledge of work practices, local institutions, of cultural norms and behaviours, of how organisations are structured and function, etc. over time, with investment of time and resources. Due to the socio-economic support immigrants can be expected to acquire the needed skills and to show, in principle, a range of labour market outcomes similar to those of the native population.

Labour market training offices could provide the following services: grouping immigrants by educational level, introducing occupation-related instruction and ensuring language instruction and workplace introduction, offering assistance when planning career and mediating between target groups and employers.

The analysis of interviews of representatives of labour market training centres. Representatives of labour market training centres answered to the following questions:

- Does your institution provide training programmes focused on the development of entrepreneurship of immigrants and asylum seekers?
- Are there any specific programmes in the field of digital entrepreneurship?
- In your opinion, would these training programmes be relevant for target groups?

Informants from both Lithuania and Latvia pointed that there are no specific training programmes for these target groups. Training programmes conducted by their training centres usually equip with certain professional knowledge and skills. Estonian respondents mentioned that there are some training modules for those registered on the labour market focused on entrepreneurship, however these programmes are not specifically developed to respond immigrants and asylums seekers’ needs. Informants from all three Baltic countries mentioned that they would be very interested in the development of training programmes in digital entrepreneurship.

Research results clearly show the demand for training programme: in Baltic countries there is no either any training programme for adults that would cover issues of digital entrepreneurship, nor for immigrants and asylum seekers. Though the research data clearly proves the need for this kind of trainings: respondents pointed that they would be highly interested in the digital entrepreneurship opportunities but they lack knowledge on it.

CONCLUSIONS

As European countries face huge challenges seeking to support immigrants and asylum seekers' socio-economic inclusion, some innovative means of fostering their integration into labour markets as a factor of economic self-sufficiency, should be developed in the cooperation of research, education and business sectors.

As the development of ICT prompts new ways for business development (one of the ways is digital entrepreneurship), the educational programmes for target groups of adults should appear in order to fill in the gap in knowledge and skills. However, at present, there are no specific programmes for immigrants and asylum seekers in the field of digital entrepreneurship in Baltic countries.

As stated by research, digital entrepreneurship is supposed to become one of the most effective ways for immigrants and asylum seekers' to integrate into labour markets, because it is not directly related to their qualifications or language skills that usually limits their employment capacity.

Research results clearly show the demand for training programme: in Baltic countries there is no either any training programme for adults that would cover issues of digital entrepreneurship, nor for immigrants and asylum seekers. Though the research data clearly proves the need for this kind of trainings: respondents pointed that they would be highly interested in the digital entrepreneurship opportunities but they lack knowledge on it.

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The economic situation and environmental effects of agricultural holdings in the EU countries

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ABSTRACT

The main purpose of the article is to recognize the relationships between economic results of agricultural holdings and their impact on the environment in the EU (23) countries. The article uses the results of agricultural holdings conducting agricultural accounting in accordance with the principles of the EU FADN system. The study uses methods of descriptive analysis and analysis of Perarson's correlation and Sperman's rank. It was noted that there is a positive relationship between the economic situation of the agricultural holdings and their negative impact on the environment in the group of the studied countries. These compounds are not very strong, although quite clear. After exceeding a certain level of development, the nature of environmental pressure of farms is more complex and depends on the peculiarity of functioning of these units. The strongest relationships were recorded between greenhouse gas emissions and the level of investment and production per 1 ha.

Keywords: agriculture, economic situation, environment, CAP, EU

INTRODUCTION

Agriculture due to the use of natural resources (mainly land) affects the environment. The levels of these interdependencies are revealed in the area of soil quality, water, air, richness and diversity of plant and animal species and the rural landscape (Lowe, Baldock 2000). The nature of the relations between agriculture and the environment can have both a positive and a negative dimension (Tirion 1999; van der Werf, Petit 2002). The hitherto successes of agricultural holdings in the EU in the economic dimension in terms of increasing of the efficiency of the production factors, the scale of production, and the implementation of innovations were paid by the increase in the negative impact on the environment.

The main aim of the article is to recognize the relationship between economic results of farms and their impact on the environment in the EU(23) countries. The implementation of the main objective of the article will allow verification of the hypothesis: there is a positive relationship between the economic situation of the farm and the negative impact on the environment in the group of countries studied. This means that the more favorable economic results (in relative terms, i.e. per capita) are accompanied by an increased negative impact on the environment. While in the case of this dependence in the absolute aspect, the previously formulated hypothesis would be obvious, in the case of relative relations it is not so evident.

The presented problem is important because of the application (practical) dimension (further evolution of the EU CAP and the associated with this environmental context for the 2020-2027 perspective), as well as the scientific aspect related to agricultural paradigms. It is mainly about the paradigm of industrial, sustainable and ecological development.

METHODOLOGY OF THE RESEARCH

The article uses the results of agricultural holdings conducting agricultural accounting in accordance with the principles of the EU FADN system. These data are microeconomic and refer to

the average farm in the field of observation of the FADN system. Thus, they represent the economic and production situation of thousands of farms in a given country that produce at least 90% of the value of standard agricultural production.¹

The economic situation was considered from the perspective of: income (SE420) per 1 ha, value added per 1 full-time worker (SE425), production value (SE131) per 1 ha, investments per 1 ha, debt ratio (debt / equity capital). The choice of these indicators was dictated, on the one hand, by the desire to show the production, income, investment and financial dimensions of the agricultural holding. On the other hand, it was about limiting the number of indicators to the most important ones. During their verification, the existing research experience, resulting also from the literature on the subject, was used (Kulawik 2008).

A wide range of indicators can be found in the literature, which are taken into account when evaluating the impact of agricultural holdings on the environment (Environmental indicators ... 2001). For the objective of this study, the following measures were used: the share of cereals in the structure of arable land (%), the stocking of animals on agricultural land (LU / ha), greenhouse gas emissions resulting from agricultural production (t/ ha)². The first of these measures refers to the assessment of biodiversity. Its increase indicates a reduction in the biodiversity of arable land use, which is not favorable for the environment (Kuś 1995). This limits the possibility of balancing the content of organic substance in the soil and affects the additional emission of carbon dioxide and nitrous oxide to the atmosphere, among others due to the increased demand for mineral fertilizers. The relation of the number of calculating large units of animals per 1 ha (LU / ha) is important for the assessment of the environmental impact of agricultural holdings. The animal production exceeding certain values of LU in relation to the land areas used (usually 2LU / 1ha) informs about the high environmental intensity of the farm's functioning.

In order to synthetically present the situation regarding the impact of agricultural holdings on the environment, the so-called synthetic environmental indicator of farms was constructed. Three partial indicators were used (compare previous considerations), testing previously the mutual correlation, so that the problem of collinearity of variables does not take place. In the case of the economic situation of agricultural holdings, the synthetic indicator was developed using the variables: income and investments per 1 ha and the debt ratio. The remaining variables were excluded due to the high correlation coefficient (above 0.6) with other variables. To construct the synthetic indicators, the TOPSIS (Technique for Order Preference by Similarity to an Ideal Solution) method was used (Hwang, Yoon 1981). Higher values of the synthetic index indicate a less negative impact of farms from a given country on the environment, or a more favorable economic situation (for a synthetic economic indicator).

The analysis were carried out for the EU countries (23). The countries that belong to the EU at least since 2004 have been pre-classified for analysis. Malta and Cyprus were excluded from this group due to the smallest resources of arable land in these countries compared to the entire examined population (23). The time scope of the analysis concerned the years 2004-2015. The arithmetic means of the examined features were estimated for each of the studied countries for the period 2004-2015. This approach also made it possible to eliminate the impact of exogenous shocks and changes in the agricultural markets.

One has used in the article the methods of descriptive analysis and analysis of Perarson's correlation and Sperman's rank supported by inductive reasoning. Simultaneous use of Perarson's correlation and non-parametric Sperman resulted from the fact that not in all cases the distribution of the variables was normal in terms of the Shapiro-Wilk test.

¹ Standard production (SO) is the average of 5 years of production value of a specific agricultural activity (plant or animal) from 1 ha or from 1 animal per 1 year, in the region's average production conditions.

² Data on greenhouse gas emissions was taken from the European Environmental Agency (EEA). Afterwards, appropriate calculations per 1 ha of UAA were made. The results from the EEA were designated in accordance with the recommendations developed by the IPCC.

THEORETICAL AND LITERATURE REFERENCES

The issue of the relationship between the economic situation and accompanying environmental effects in agriculture has a rich literature on the topic (Matuszczak 2013; Zieliński 2016; Pretty et al. 2000). This may be due, among other things, to the fact that in recent decades one can notice increased interest in sustainable development. Currently, one of the challenges for agriculture in the EU countries is to adapt production potentials and technologies to the conditions of cost competitiveness (price) while maintaining relatively high environmental standards. The interest of economists in the area of environment has increased in last decades. It was the basis for the development of such trends as the economy of sustainable development (Rogal 2004), ecological economics (Daly, Farley 2004) or environmental (Hanley et al. 2007).

From the beginning of the CAP of the EU up to the 1990s, the model of industrial agriculture, in which the processes of specialization, concentration of production were the most important, improvement of the efficiency was basically not questioned. Increasing epidemics of animal diseases (BSE, foot-and-mouth disease, bird flu, ASF), increased of environmental degradation due to common use of chemicals, as well as the still unresolved problem of agricultural incomes have led to reflection on the assessment of the functioning of the agricultural holdings. The farmers fell in the so-called tread-mill, in which the increase in food production over demand offered on the market leads to a fall in the prices of products produced by farmers, and thus to a decrease in their income below the level of the average for farms outside of agriculture. To defend against these negative phenomena, farmers increased production through technological changes, which again resulted in overproduction and a drop in prices (Czyżewski 2017). As a result, the market environment took over the economic surplus produced by farmers. The point is to take into account to a greater extent the environmental context in the evaluate of functioning agricultural holdings, as well as to encourage farm managers to pro-environmental activities (which is also taking place in the EU countries thanks to the CAP instruments).

Contradictions between the production goals of agriculture and the environment result from the fact that the market does not value environmental services and goods, treating them as a free resources, and as a consequence, they are reflected in production costs and prices to a limited extent. Meanwhile, their value, as some studies show (Constanza et al. 1997), may even exceed the value of agricultural products and services priced by the market. On the other hand, research (Pretty et al. 2000) emphasizes that the external costs of agriculture in Great Britain in the 1990s amounted to approximately 208 £ / ha of UAA (incomes in this period can be estimated at an average of about 300 £/1 ha). It may result from this that the economic performance of farms with capital-intensive (industrial) techniques is generally overvalued (Ball et al. 1994) and the remaining ones are undervalued about environmental and socio-cultural values. This results from the monetary valuation of goods that are traded, while excluding external effects. There is a need to create a market for public goods related to agriculture through appropriate instruments not only in the sphere of agricultural policy, but above all addressed to rural areas (Sunding 2003).

The literature on the subject is dominated by the studies confirming a negative increase in environmental impact in the case of farms with intensive agricultural production (Rodriguez et al. 2004), especially in animal breeding in an industrial system (ie without land). For example, according to W. Wrzaszcz (2017), agricultural holdings that exert the greatest environmental pressure (for example animal specialization) achieved more favorable economic results, compared to organic farms and without specialization. These dependencies, however, are not so obvious. As according to the meta-analysis (Nemes 2009) referring mainly to developed countries, organic farms (and therefore with lower environmental pressure) are economically more effective. In turn M. Zieliński (2016) emphasizes in studies for agricultural holdings in Poland, that the reduction of greenhouse gas emissions has a positive effect on the efficiency of management and development of farms specializing in field crops. However, this only takes place within certain limits of the production scale.

A compromise between economic and environmental goals at the level of the agricultural holdings as well as the whole of agriculture requires state or supranational institutions (EU) through, for example, financial instruments in the scope of agri-environmental programs,

dependence of subsidy payments on compliance with welfare regulations in environment sphere (the so-called "cross-compliance"), modulation (reduction of direct payments for the largest producers), afforestation, support for areas with less favorable conditions for agriculture (LFA). Currently, as a part of agricultural support from the EU budget, subsidies can be distinguished that support the creation of public goods. These include subsidies for set-aside, agro-environmental, LFA and rural development. In this way, farmers performing public tasks such as, for example, preservation of the landscape, protection of ecosystems, conservation of the natural environment, preservation of diversity, are rewarded for these services from public funds. At the same time, highly commercial farms have to adapt to these increased environmental regimes, which makes them more pro-environmental.

EMPIRICAL VERIFICATION

Agricultural holdings in the EU countries show a wide variety in terms of economic performance (tab 1). In the case of absolute income level, these differences result mainly from scale of production, the efficiency of production factors, different production structures, which translates into concentration and specialization processes. Despite of the highest concentration of agricultural land in agriculture in Slovakia, the average income in the studied period (2004-2015) reached negative values. On the other hand, in the case of income per 1 ha of UAA, the highest level was in the countries with high intensity of production (Belgium, the Netherlands) or with domination of horticultural production (Greece, Italy). It is worth noting that in the case of farms from Italy, especially from Greece, the absolute level of agricultural income in the average farm is not high and does not ensure parity income due to the low average area of used land.

In countries with high capital intensity of production (Benelux, Denmark) a high level of investment was recorded. This is due to the relatively high level of depreciation and land prices. Consequently, this stimulates the demand for investment by the farms. It can be noted that the high debt ratio is observed in countries with a capital-intensive type of agricultural development. At the other pole there are farms from such countries as Slovenia, Greece, Spain and Italy, where the debt did not exceed 5% of the value of equity. When it comes to labor productivity (by the prism of value added per full-time worker), agricultural holdings from Central and Eastern Europe stand out "in minus". This is mainly due to the lower level of agricultural development consequently the low value of technical labor equipment and lower support for agricultural income.

In the case of negative environmental pressure exerted by agricultural holdings in the studied group of countries, it can be noted that in countries with high intensity of production and capital-intensive techniques of production, it was much higher (tab.1). This applied mainly to the Benelux countries and Denmark. In turn, the weakest negative impact through the prism of the examined measures took place in Portugal, Slovakia and Estonia. This was mainly due to the low intensity of agricultural production and the greater importance of crop production. High density of livestock production is highlighted in Greece, the Netherlands, Denmark and Belgium. This affects the amount of greenhouse gas emissions.

The relations between selected measures referring to the economic and environmental dimension of the group of farms under study indicate the existence of statistically significant compounds (tab 2). Apparently this was evident in the case of stocking density, production and investment per 1 ha of UAA in relation to other partial measures. The strongest, however, dependencies were recorded for the links between greenhouse gas emissions and investments and the value of production per 1 ha. In other cases the relationships were not very strong and were not statistically significant, which does not mean that they do not actually happen. In the light of these dependencies, it can be concluded that in a situation of more intensive agricultural production there is a greater negative environmental impact. It is quite obvious, although these dependencies are not as strong as one would expect.

Table1: Selected characteristics for an average farm (FADN system) in the EU countries (23) regarding to the economic situation and environmental impact (mean for the period 2004-2015)

| Countries | Income (th. EURO) | Income (th. EURO) per 1 ha | Indicator of debt (a) | Farm Net Value Added / Annual Work Unit (SE425) in th. EURO | Utilised agricultural area in ha | Total output/ha w tys. EURO | The share of total subsidies in income | The share of cereals in arable lands | The number of Large Units (LU) per 1 ha | Greenhouse gas emission (t / 1 ha) |
|------------------------|-------------------|----------------------------|-----------------------|---|----------------------------------|-----------------------------|--|--------------------------------------|---|------------------------------------|
| (Bel) | 52,0 | 1,12 | 0,48 | 39,69 | 46,6 | 4,22 | 0,47 | 0,58 | 2,39 | 7,50 |
| (Cze) | 34,69 | 0,16 | 0,27 | 15,55 | 218,4 | 1,15 | 2,11 | 0,71 | 0,81 | 2,31 |
| (Dan) | 15,16 | 0,17 | 1,34 | 66,06 | 91,3 | 3,49 | 2,33 | 0,80 | 2,02 | 3,94 |
| (Deu) | 36,03 | 0,43 | 0,46 | 34,34 | 82,9 | 2,31 | 0,95 | 0,72 | 1,60 | 3,82 |
| (Ell) | 11,52 | 1,33 | 0,01 | 12,26 | 8,6 | 2,42 | 0,57 | 0,67 | 3,44 | 1,73 |
| (Esp) | 22,04 | 0,58 | 0,05 | 21,35 | 37,9 | 1,23 | 0,42 | 0,72 | 0,93 | 1,47 |
| (Est) | 15,83 | 0,13 | 0,38 | 12,79 | 119,8 | 0,62 | 1,45 | 0,73 | 0,56 | 1,30 |
| (Fra) | 34,23 | 0,40 | 0,45 | 31,47 | 84,9 | 1,82 | 0,92 | 0,69 | 1,30 | 2,62 |
| (Hun) | 13,27 | 0,26 | 0,29 | 15,20 | 50,4 | 1,12 | 1,11 | 0,72 | 0,89 | 1,10 |
| (Ire) | 19,50 | 0,43 | 0,13 | 21,69 | 45,8 | 0,96 | 1,04 | 0,91 | 1,26 | 4,19 |
| (Ita) | 22,50 | 1,35 | 0,03 | 23,47 | 16,6 | 2,98 | 0,30 | 0,71 | 1,53 | 2,39 |
| (Ltu) | 12,10 | 285,7 | 0,18 | 7,31 | 42,3 | 0,62 | 0,81 | 0,78 | 0,64 | 1,56 |
| (Lux) | 47,34 | 0,61 | 0,35 | 34,60 | 78,0 | 1,93 | 1,22 | 0,79 | 1,53 | 5,00 |
| (Lva) | 10,97 | 0,17 | 0,43 | 7,31 | 65,9 | 0,62 | 1,31 | 0,76 | 0,48 | 1,31 |
| (Ned) | 48,17 | 1,38 | 0,98 | 46,26 | 34,8 | 10,42 | 0,37 | 0,33 | 2,55 | 9,94 |
| (Ost) | 25,00 | 0,81 | 0,14 | 20,90 | 30,9 | 1,92 | 0,80 | 0,72 | 0,94 | 2,38 |
| (Pol) | 7,99 | 0,44 | 0,12 | 6,02 | 18,2 | 1,30 | 0,62 | 0,80 | 1,59 | 2,00 |
| (Por) | 11,22 | 0,44 | 0,06 | 8,93 | 25,2 | 0,98 | 0,65 | 0,53 | 0,71 | 1,77 |
| (Suo) | 20,28 | 0,38 | 0,43 | 23,97 | 53,8 | 1,37 | 2,39 | 0,83 | 1,19 | 2,83 |
| (Sve) | 17,21 | 0,18 | 0,55 | 30,17 | 96,5 | 1,47 | 2,09 | 0,78 | 0,95 | 2,26 |
| (Svk) | -6,78 | -0,012 | 0,16 | 8,24 | 0,56 | 0,79 | -21,7 | 0,69 | 0,49 | 1,52 |
| (Svn) | 5,67 | 0,53 | 0,04 | 3,60 | 10,6 | 1,88 | 1,37 | 0,73 | 1,23 | 3,59 |
| (Uk) | 42,38 | 0,27 | 0,41 | 36,48 | 0,15 | 1,25 | 1,01 | 0,69 | 1,00 | 2,57 |
| Mean | 22,54 | 0,51 | 0,34 | 22,94 | 85,7 | 2,25 | 0,11 | 0,71 | 1,31 | 3,00 |
| Median | 19,50 | 0,42 | 0,29 | 21,35 | 50,4 | 1,53 | 0,95 | 0,72 | 1,19 | 2,38 |
| The coef. of variation | 67,44 | 79,8 | 93,7 | 66,7 | 132,9 | 100,5 | - | 16,04 | 55,8 | 70,19 |

(a) Indicator of debt = total liabilities / value of equity

Source: own calculations based on FADN results presented on the website <http://europa.eu.int/comm/agriculture/rica/dwh>

Table 2: Pearson's correlation coefficients and Sperman's rank (in brackets) between variables referring to the economic situation and environmental impact for the EU countries (23) (mean for the period 2004-2015)

Source: own calculations based on FADN results presented on the website <http://euntropa.eu.int/comm/agriculture/rica/dwh>

| Variables | share of cereals | LU/1ha | Greenhouse gas emissions/1ha |
|------------------------------------|---------------------|----------------------------------|----------------------------------|
| Farm Net Value Added/1ha | -0,697* (0,244) | 0,771* (0,707*) | 0,755* (0,384) |
| Farm Net Value Added / AWU (SE425) | -0,177 (0,195) | 0,449* (0,464*) | 0,621* (0,373) |
| Indicator of debt | -0,199 (-0,054) | 0,266 (0,215) | 0,523* (0,312) |
| Total output/ha | -0,729* (0,335) | 0,642* (0,813*) | 0,865* (0,468*) |
| Income/1ha | -0,528* (-0,163) | 0,750* (0,425*) | 0,536* (0,311) |
| Investments/1ha | -0,55* (-0,14) | 0,46* (0,31) | 0,89* (0,598) |

*significance level $p < 0.05$; The bold font mean statistically significant relationships simultaneously for the Pearson's and Sperman's correlations

A synthetic comparison of the relationships between economic results and the impact of agricultural holdings on the environment is presented in fig. 1. One has used the indicators showing the synthetic situation in the economic and environmental dimension (see methodical part) of the studied group. They show that there was a fairly clear relationship between economic results and the environmental pressures exerted by agricultural holdings. The more favorable economic situation was accompanied by a more negative impact on the environment. It is worth noting that before crossing the value of 0.4 (for the synthetic economic indicator) the situation in the scope of the examined variables does not show excessive variations (except for Portugal and Denmark for the environmental dimension). After exceeding this threshold there is a clear increase in the variations in the scope of the studied variables. This is reflected by the distance of individual observations from the regression line. This means that at a higher level of economic development of farms, the negative environmental impact is not a simple dependence and is related to a specific determinants of the functioning of farms in given countries, ie resources, production directions, and infrastructure.

FINAL CONCLUSIONS

The analysis presented in the article allow to formulate conclusions:

- a more favorable economic situation of the surveyed group of agricultural holdings is accompanied by a greater negative impact on the environment. These compounds are not very strong, although quite clear. It is about not a very good fit of the regression model ($R^2 = 0.44$) (figure 1) in the case of links between the economic situation and the environmental effects of agricultural holdings, in the group of the studied countries. However, these compounds were statistically significant. In this way, the research hypothesis was confirmed, albeit not fully. Further research in this area should be implemented at the level of the EU regions

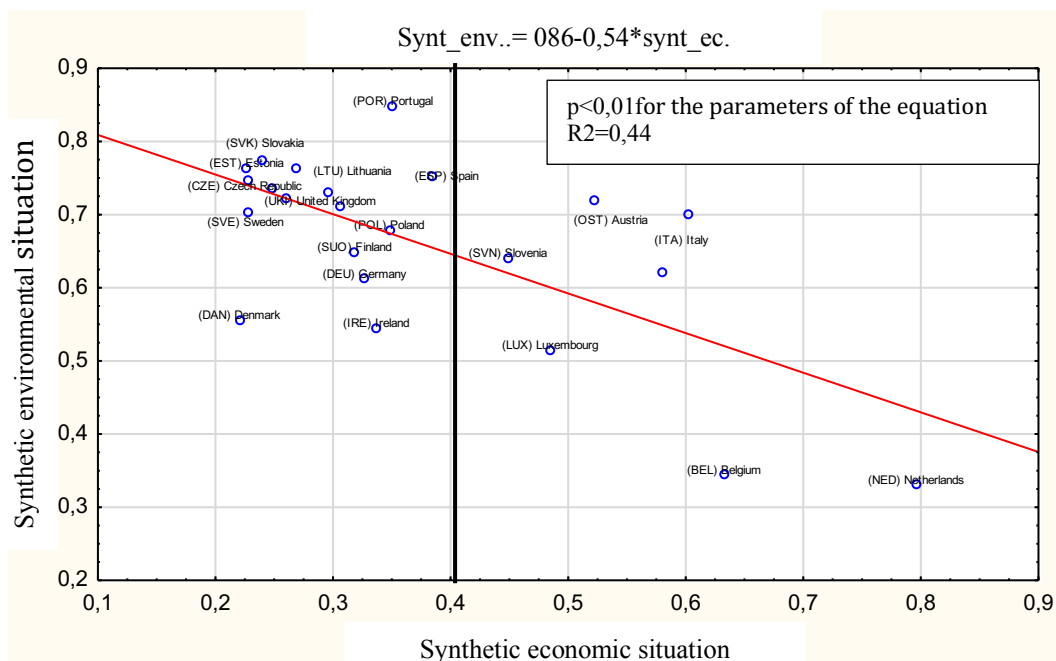


Figure 1: The relations between the economic and environmental spheres in the EU countries (23) from the perspective of synthetic indicators: environmental and economic (see methodical part) (mean for the period 2004-2015)

Source: own calculations based on FADN results presented on the website <http://europa.eu.int/comm/agriculture/rica/dwh>

- after exceeding a certain level of economic development, the nature of environmental pressure of farms is more complex and depends on the peculiarity of functioning of these units. At a higher level of economic development of agricultural holdings, the negative environmental impact is not a simple dependence
- the strongest relationships (from the perspective of Pearson's and Spearman's correlation coefficient) were recorded between the level of investment and production per 1 ha and greenhouse gas emissions. This means that increasing the intensity of production as well as investment quite clearly translates into an increase in the negative impact of agricultural holdings on the environment. It should be noted due to the cross-compliance principle, part of the investment is related to a higher standards also environmental, which makes them more pro-environmental. However in the case of farms with high production intensity, this investment context is of a minor importance
- relationships between economic results and negative environmental impact are not clear in the light of the literature topic. Despite of the intuitive conviction that farms with higher environmental regimes (eg organic) are economically weaker, from the perspective of many studies, these relationships are more complex

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Source of Information on the Perceived Risk and Safety in the Tourism Industry: a Comparative Analysis of Polish and Lithuanian Young Tourists

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ABSTRACT

The aim of the paper is the recognition and assessment of the source of information on the perceived risk and safety in the tourism sector in Poland and Lithuania. For the purpose of this work, the results of a pilot research survey which was conducted among Polish and Lithuanian young tourists in Szczecin (Poland) and in Vilnius (Lithuania) were used. Research results indicate that government information and the opinion of family or friends are irrelevant, and that the respondents pay attention to information received from the media and other factors.

Keywords: young tourists, source of information, tourist safety.

INTRODUCTION

Scientific literature has seen an increasing number of studies the purpose of which is to examine the development of risk perceived by tourists and conduct factor analysis. Although Poland and Lithuania are among safe countries in terms of travelling, some first scientific research has already occurred in these countries. The first ones to start exploring this topic were Survila, Mikėnas and Žuromskaitė (2017). Polish students also became the object of research related to the survey on perceived risk. Their attitude to security was compared to the attitude of the Israeli students (Desivilya, Teitler-Regev & Shahrabani, 2015). Polish students were chosen for the reason that they lived in a safe region (low index of terrorism risk), meanwhile, Israeli students lived in a dangerous territory and often faced risks and disasters. The focus was put on the impact of a residential place on the choice of travel directions (the directions chosen for the analyses were Egypt, India, Japan, and Turkey). The research revealed that students who came from Israel were less prone to travel to Egypt, Turkey and India. To compare, students from Poland were “more courageous”. Besides, the Israeli tourists did not tend to choose destinations that were not friendly and hospitable towards Jewish tourists.

The aim of this article is to identify the main information sources which serve as the means for young tourists in Poland and Lithuania to get key information about potential risks and threats in tourism destination. This is relevant in the context of increased risk, in particular, in Europe and the Middle East, in which tourists are more sensitive to received information and tend to look for this type of information before travelling. Search for information on the basis of literature analysis is considered a risk reducing strategy (Roehl & Fesenmaier, 1992): the higher the danger is perceived,

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the more information will be looked for by tourists and referred to when making rational decisions (Amara & El Samadicy Ragheb, 2012). However, to assess the risk of a journey and its safety, it is also important to have reliable sources of information.

Young people constitute the part of society which travels very actively. Travelling is an important constituent of young people's life; meanwhile, there is a lack of studies on this particular segment of travellers (Promsivapallop & Kannaovakun, 2017). Besides, in comparison to elder generations, the youth uses a wider range of information (Bizirgianni & Dionysopoulou, 2013). Details resulting from available research show that young people are more resistant to external crises compared to elder persons (Hajibaba, Gretzel, Leisch & Dolnicar, 2015), thus they most probably assume a higher degree of risk.

Why Poland and Lithuania have been chosen for the study? These are neighbouring countries which have started creating their independence not long ago and both have similar experiences. Poland and Lithuania are also similar in economic terms. In 2016, GDP per capita adjusted by purchasing power parities (real expenditure per capita in PPS EU 28) in Lithuania was 22,000 and in Poland – 19,900 (Eurostat, 2018). Both countries are attributed to the regions that have a low terrorism risk index. Research show that tourists from such regions are “braver” when choosing tourism destinations (Desivilya, Teitler-Regev & Shahrabani, 2015), they, therefore, might underestimate the safety-related aspects, including the search for specific information.

Methodology

Research Instrument and Measures. The scale which perfectly conveys the search for information sources has been developed by referring to the model of Fodness and Murray (1999), Hernández-Méndez et al. (2015) as well as with reference to Schroeder and Pennington-Grey (2013) and has been supplemented by the authors with the official governmental information. With the recent increasing number of terrorist attacks and the growing scale of threats, governments of different countries take responsibility of informing their citizens of potential threats and unsafe regions. The governmental information means information provided by the government on the websites of the Polish and Lithuanian ministries of foreign affairs. The websites contain the main official information on the level of safety in a certain region. To make sure that this information is accessed by tourists, the ministries of foreign affairs developed and introduced mobile apps. In Lithuania, such app is called “Travel Safely” (*Lithuanian* Keliuok saugiai) and in Poland – iPolak. Nevertheless, there has been no research so far on how popular these apps are among tourists. The scale includes 8 sources of information encompassing commercial, non-commercial and official governmental information which are also different in terms of type of information (impersonal and personal).

All the variables were measured using the Likert Scale with 5 response levels (from 1=of no importance to 5=very important). The reliability of the scale was verified by applying the internal consistency method and calculating Cronbach's Alpha which is “very useful in developing attitude scales as the alpha level indicates if the items are measuring in the same construct” (Burns & Burns, 2008, p. 417). Cronbach's Alpha ranged from 0,8501 (in case of Poland) to 0,8344 (in case of Lithuania). The obtained high values of the coefficient (Cronbach Alpha > 0.8) confirm that the homogeneity of the elements of the scale is regarded as highly acceptable.

Data collection. This article represents the results of a pilot research survey which was conducted in November 2017 by the authors of the article among 130 students at the Faculty of Economics and Management University of Szczecin in Poland and 130 students of the Faculty of Public Governance at Mykolas Romeris University in Lithuania. The examined research samples accounted for 8.4% of the total number of students studying in each of these faculties. Only respondents who are tourists have been subject to the analysis. The fact of being a tourist was determined by the question contained in the questionnaire, where respondents were asked whether they travelled and how many times a year. People who answered “no” were omitted from the research sample. Demographic and travelling characteristics of the respondents are provided in Table 1.

Table 1: Profiles of the samples

| Demographic and travelling characteristics | | Country | | | |
|--|--------------------------|---------|------|-----------|------|
| | | Poland | | Lithuania | |
| Gender | Female | N | % | N | % |
| | | Female | 86 | 66.2 | 89 |
| | Male | 44 | 33.8 | 41 | 31.5 |
| How often travels | Less than once a year | 8 | 6.2 | 9 | 6.9 |
| | Once a year | 18 | 13.8 | 44 | 33.8 |
| | 2- 3 times a year | 46 | 35.4 | 46 | 35.4 |
| | 4 -7 times a year | 33 | 25.4 | 21 | 16,2 |
| | More than 8 times a year | 23 | 17.7 | 9 | 6.9 |
| Whether is willing to pay more for travel safety | Would not pay | 38 | 29.2 | 39 | 30.0 |
| | Would pay | 92 | 70.8 | 91 | 70.0 |

Statistical approaches: The statistical package SPSS 24 was used for statistical analysis of the data. Descriptive statistics which is suitable for the Likert Scale was employed, namely, frequency expressed by means of percentage, Moda, Mediane (Burns & Burns, 2008) was used. Hypotheses for two independent samples were verified by applying nonparametric criteria of Mann-Whitney U test and Wilcoxon rank sum test which is considered “a formal test of the difference in the sums of ranks, with the null hypothesis that two independent samples drawn from the same distribution will have equal rank sums” (Berkman & Reise, 2012, p. 252). To compare the details of a few independent samples, Kruskal–Wallis test was applied. The statistical level of significance $\alpha = 0.05$, p value (Asymp. Sig.) ≤ 0.05 was chosen. The hypotheses were checked against the aim to find out whether the evaluation of information sources depend on the country of studies (PL and LT), gender, frequency of travelling as well as on the attitude and readiness to pay more for travel safety.

Results

Evaluation of impersonal information sources. All impersonal information sources in both countries are viewed similarly, excluding government furnished information (Figure 1). Information on the number of tourist deaths is seen as important or very important by 53.1% PL and 47.7% LT respondents. Besides, it should be noted that such information was assessed as very important by the biggest number of respondents of the survey (*Mode* of data of both countries = 5). The importance of information provided in the countries of destination was also welcomed. Information on safety measures in the objects of tourism was assessed as important and very important by more than a half of respondents from both countries (51.5% PL and 53.8 % LT). Information provided by local sources was evaluated similarly (it was seen as important and very important by 53.1% PL and 49.2% LT respondents). Information in mass media was desired (it was assessed as important and very important by 47.7% PL and 50.0% LT respondents, *Mode* = 4).

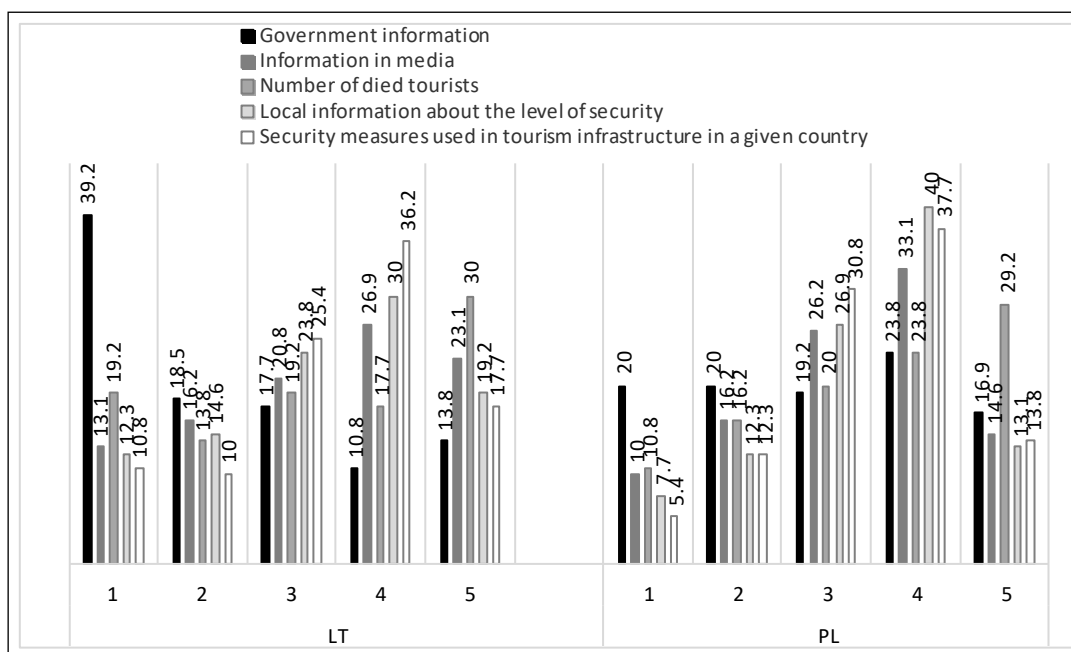


Figure 1: Distribution of evaluation(s) of impersonal information sources according to countries: descriptive statistics*

* Scale for evaluation of the importance of information sources ranging from 1=of no importance to 5=very important.

Evaluation of information provided by the government was unambiguous in both countries. This source was mostly negatively responded to in both countries – it was seen as not very important and not important by as many as 40.0% PL and 57.7% LT respondents. These results reiterate the results of the survey carried out by Bizirgianni and Dionysopoulou (2013) who analysed whether young people visited National Tourism Organisation (NTO) pages on social media and identified that as many as 78% of surveyed young people were not visiting the sites of NTO in Social Media, and only 26% visited them. As a result, an assumption could be made that such official sources focus little on the strategies of spread of information. Following a comparison of evaluations according to countries, it was determined that respondents from Poland evaluated information provided by government higher than the respondents from Lithuania (Mann-Whitney U = 6 519.500; Wilcoxon W 15 034.500; Z -3.264; p = 0.000, p < 0.01).

Evaluation of the importance of personal information sources. As seen from the data of descriptive statistics (Figure 2) the WOM (word of mouth) information sources were assessed slightly poorer (evaluations “important” and “very important” of all these variables were under 50%), a relatively bigger number of respondents evaluated these sources in a neutral manner “neither important, nor unimportant”. The most neutral evaluated was friends’ opinion. The analysis of surveys demonstrates that WOM information sources are “the most commonly used information source[s] for all travellers before making travel-related decisions (Murphy, Mascardo & Benckendorff, 2007); friends, acquaintances and family members have effect when planning most travel aspects (travel direction, hotels, travel details) (Hernández-Méndez et al, 2015). There are studies stating that young travellers tend to refer to the opinion of relatives and friends when planning their travels (Bizirgianni & Dionysopoulou, 2013), however, the results of our survey show that when assessing information sources, given the aspects of travel safety, the opinion of relatives and friends is seen as “neither important nor irrelevant”. A more reliable source of information is recommendations of travel agency staff. Such employees in often cases have appropriate education and more information on dangerous tourism destinations. It is necessary for them to have such

knowledge since they are partly responsible for the safety of their customers (tourists) and in case of a dangerous situation they must ensure proper coordination. No significant and statistically important differences when comparing the assessment of word of mouth (WOM) evaluation of sources were identified.

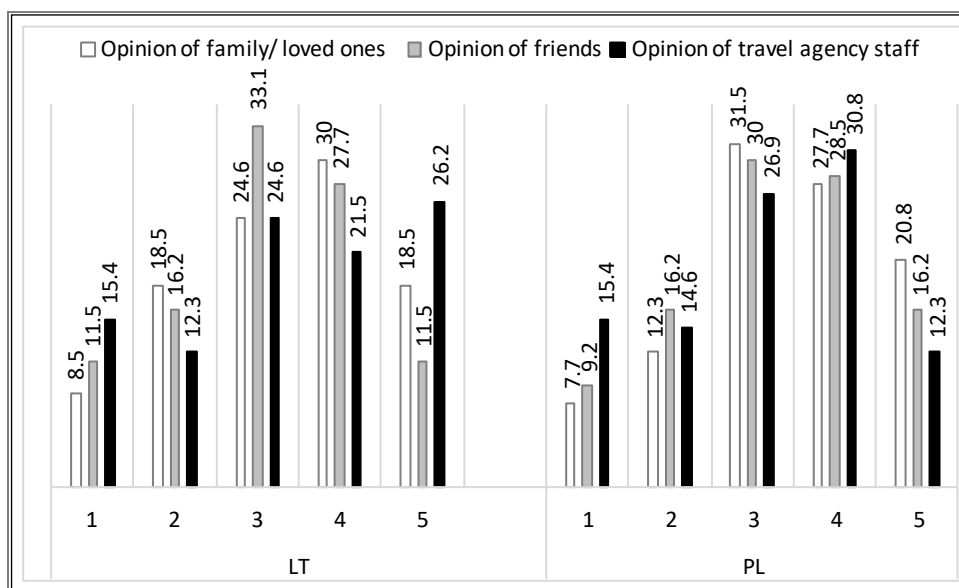


Figure 2: Distribution of evaluation(s) of personal information sources according to countries: descriptive statistics*

* Scale for evaluation of the importance of information sources ranging from 1=of no importance to 5=very important.

Factors of the importance of information sources when evaluating travel risk and safety.

The analysis of the data using *Mann-Whitney U and Wilcoxon W tests* showed that in the case of Polish and Lithuanian students, there were statistically significant differences in the comparison of data on the basis of gender. Gender has, in part, impact both on the evaluation of the importance of impersonal and personal information sources. In both given countries women evaluated information provided by media (PL: Mann-Whitney U 1,169.000; Wilcoxon W 2,159.000; p=0.000, p<0.011; LT: Mann-Whitney U 1,237.000; Wilcoxon W 2,098.000; p=0.003, p<0.01) and the opinion of travel agencies’ staff (PL: Mann-Whitney U 1,127.500; Wilcoxon W 2,159.000; p=0.000, p<0.01; LT: Mann-Whitney U 941.500; Wilcoxon W 1,802.500; p=0.000, p<0.01) higher than men. The Polish female respondents favoured official government information more than men respondents (Mann-Whitney U 1,038.500; Wilcoxon W 2,028.500; p=0.000, p<0.01) and they found information on the number of tourist deaths (Mann-Whitney U 1,395.000; Wilcoxon W 2,385.000; p=0.012, p<0.05) as well as local information about the level of security (Mann-Whitney U 1,439.500; Wilcoxon W 2,429.500; p=0.02, p<0.05) more significant than men did. Meanwhile, female respondents from Lithuania valued their friends’ opinion (Mann-Whitney U 1,425.500; Wilcoxon W 2,286.500; p=0.039, p<0.05) more significantly than male respondents.

Yet another factor which might affect the evaluation of the importance of information sources is frequency of travelling. Application of the data analysis by means of Kruskal Wallis Test has revealed that frequency of travelling is influenced solely in terms of evaluation of personal information sources among the respondents from Poland. Polish respondents who travelled rarely (less than once a year or once a year) found the opinion of their relatives statistically more reliable (Chi Square=9.531, df 3, p=0.23, p<0.05) likewise, respondents from Poland who travelled less than once a year found the opinion of their friends more important (Chi Square=8.203, df 3, p=0.42, p<0.05). Assumption could be made that respondents, who travel less, have less corresponding and

specific experience of searching for information related to travel risk and safety; they, therefore, tend to use sources found in close environment (ask their relatives and friends).

One more fact showing tourists' attitude towards information about risk and safety in tourism destination is their willingness to pay extra for security and preference to travel to a country with lower risk index. The analysis of the data using *Mann-Whitney U* and *Wilcoxon W* tests showed that in the case of Polish and Lithuanian young tourists, there are statistically significant differences between respondents who are willing to pay more and go to a country with a low level of risk and type of source of information on perceived risk and safety in tourism destination. Young travelers from Poland who are willing to pay more for the safety of travel give greater importance to information in media (Mann-Whitney U 1,259.500; Wilcoxon W 2,000.500; $p=0.01$), information about number of died tourists (Mann-Whitney U 1,175.000; Wilcoxon W 1,916.000; $p=0.003$ $p<0.01$), local information about the level of security (Mann-Whitney U 1,194.500; Wilcoxon W 1,935.500; $p=0.003$ $p<0.01$), information about security measures used in tourism infrastructure in a given country (Mann-Whitney U 1,265.000; Wilcoxon W 2,006.000; $p=0.010$) and to opinion of travel agency staff (Mann-Whitney U 1,353.000; Wilcoxon W 2,094.000; $p=0.037$ $p<0.05$). Whereas, young travelers from Lithuania who are willing to pay more for travel safety find information in media (Mann-Whitney U 1,167.500; Wilcoxon W 1,947.500; $p=0.002$ $p<0.01$), information about security measures used in tourism infrastructure in a given country (Mann-Whitney U 1,261.500; Wilcoxon W 2,041.500; $p=0.007$ $p<0.01$) and opinion of travel agency staff (Mann-Whitney U 1,146.500; Wilcoxon W 1,926.500; $p=0.001$ $p<0.01$) more important. Evidently, young tourists from the both countries consider information in media and information provided by specialists as well information about security measures used in tourism infrastructure in a given country in trying to have their travel safety guaranteed. On the other hand, there are differences between students from Poland and Lithuania in relation to the importance of number of died tourists and local information about the level of security. This may be due to the fact that in recent years, many more Polish citizens than Lithuanian were killed as a result of terrorist attacks.

CONCLUSIONS

Research results indicate that young-tourists pay more attention to impersonal than to personal information when searching for information on travel safety issues.

Among all information sources, official government information and the opinion of family or friends are, in the opinion of the respondents, statistically irrelevant and they pay attention to information received from media and other sources, such as the opinion of travel agents, the number of tourist deaths, the information about the level of security (security measures used in the tourism infrastructure in a given country, and local information. The fact that the respondents are sensitive to such sources of information may mean that young people are eager to find some information about perceived risk and safety in a particular tourism destination, but they do not know where to look for it.

There are some differences between young tourists from Poland and Lithuania in terms of importance of number tourist deaths and local information about the level of security (in Poland, for a larger percentage of respondents these factors are important). This may be due to the fact that in recent years, there were considerably more Polish citizens who were killed as a result of terrorist attacks than the number of the Lithuanian citizens. This might be the factor used to explain the significantly more positive evaluation of the importance of information provided by the government among the young tourists from Poland.

The analysis also drew two additional important conclusions. Firstly, the significance of information sources depends on gender (for women the sources of information are significant, which was confirmed statistically). Secondly, it was found out that the importance of sources of information for young tourists also depends on the level of tourists' willingness to pay more to be able to go to tourist destinations with a high level of security. The same sources of information still play a role for tourists but their statistical significance is strengthened when tourists are ready to pay more for a high level of security.

The analysis carried out in the paper indicates that there is a need for further research in this area.

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ICHIMOKU TREND PREDICTION. IS IT WORKING ON FACEBOOK?

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ABSTRACT

Today, day trade investors have a huge diversity of trading systems, technical indicators, graphs, volatility to support their investment decisions.

This article simulates, tests and explores the Japanese Ichimoku Cloud prediction system with first quarter of 2017 Call options on Facebook. We evaluate the ability of the Ichimoku indicator to foresee future profitable movements to contribute in decision making.

We conclude that this indicator will provide a predisposed capacity in this market, allowing analysis and negotiation strategies, as well as momentum detection, breakout, which will translate into an increase in Profitability.

Keywords: Ichimoku Kinko Hayo, Momentum, Kumo, Day Trader, Facebook.

INTRODUCTION

Globalization and competitiveness in organizations and economies are reflected in the financial markets, creating scenarios of speculation and opportunities, which can translate into increases in returns, allowing the investor to maximize profit and minimize risk.

Similarly, for every decision we make throughout our lives, we take into account their consequences whether immediate or long term. We are speculators by nature, whether at work or at home. Our choices are usually made according to the best expectations.

Each investor's decisions reflect behavioral patterns such as greed, fear, euphoria or panic, feelings that are intrinsic to human nature and drive markets, these markets are now an irreplaceable and growing element in any modern and competitive economy.

The prediction of these financial markets behavior has been the subject of great scientific research in recent decades, but today we can say there is no simple theory that can explain or predict their behavior.

Over time, there have been many controversies regarding techniques for market behavior predictability and analysis, of which Technical and Graphic Analysis is one of the most recurrent.

Ichimoku Kinko Hyo, is a Technical and Graphic Analysis developed by a Japanese journalist, Goichi Hosoda in the 30s, this graphical indicator Ichimoku, predicts the behavior of the market. Briefly, it is a trend-tracking system to support decision-making. For Goichi Hosoda this methodology is a vision of the whole with power of synthesis.

Trades that defend the use of this technique are always increasing because the simplicity and ease of interpretation, allowing an easy and fast combination of market analysis tools included on online brokers.

This article analyzes the predictive capacity of this Ichimoku methodology on the evolution of the price of financial call options for Facebook.

In a first part we will make a brief review of the literature, as well as the presentation of the methodology used and the data sample. In the second part, an analysis will be made discussion of the results found, as well as the main conclusions of our study.

LITERATURE REVIEW

The well-being of modern societies depends on their economy, and at the heart of this are the markets and their equilibrium, making it crucial to understand and predict market movements, therefore this predictive capacity is one of the forms of support to decision making in investments, (Cronqvist, Siegel & Yu, 2015).

The Technical and Graphic Analysis is defined as the study of market movements, essentially through the analysis of graphics, forecast of future quotations trends. The Technical and Graphic Analysis became more important through the theory of Charles Dow, as cited in Taylor & Allen (1992).

Authors such as Taylor & Allen (1992), Elliott (2007), Matsura (2013), Ahmar (2017), consider that technical and Graphic analysis is characterized by a set of techniques and studies based on the historical movements of market prices of financial assets since, graphical tools are at the center of this approach, they try to predict future movements of quotes of the most diverse securities, for example, stocks, forex, indices, commodities, derivatives or options.

We will resume the most relevant articles in scientific databases. A research method proposed by Granovsky (2001), Willett (2007), and defended by Denyer and Tranfield (2009), , conclude that the use of Technical and Graphic Analysis increases the return of investment.

Table 1 - Some Studies Concluding Favorably on Technical and Graphic Analysis
Source: Prepared by Authors

Park & Irwin (2007) have reviewed 95 studies produced until the early 1990s, concluding that 56 studies find positive results in relation to Technical and Graphic Analysis negotiation strategies, 20 studies obtain negative results and 19 studies were not conclusive.

| RESEARCHERS | SCIENTIFIC INVESTIGATION | CITATIONS |
|--|---|-----------|
| Brock, W., Lakonishok, J., & LeBaron, B. (1992). | Moving averages - Dow Jones Index from 1897 to 1986 | 2508 |
| Taylor, M. P., & Allen, H. (1992) | Survey by questionnaire, to major London exchange traders in 1988. | 1242 |
| Blume, L., Easley, D., & O'hara, M. (1994) | The Volume Informational Paper and Technical Analysis | 1314 |
| Neely, C., Weller, P., & Dittmar, R. (1997) | Exchange rates between 1981-1995 | 711 |
| Lo, A. W., Mamaysky, H., & Wang, J. (2000) | Performance of graphic analysis in US actions from 1962 to 1996 | 1139 |
| Ahmar, A. S. (2017) | Indonesian Stock Exchange in the period of April 5, 2001 - September 20, 2016 | 11 |

Ichimoku Kinko Hyo is a trading system, based on the technical analysis of graphics that was originally developed by the Japanese journalist Goichi Hosoda, in the 1930s, Goichi Hosoda under the pseudonym "Ichimoku Sanjin" created the technical indicator known as Ichimoku Clouds,

however this indicator was only made public in the 60s, and has the meaning of "a single look" on the price balance graph.

Goichi Hosoda believed that the market was a direct reflection of group dynamics or human behavior. The author argued that human behavior could be described as a constant cyclic movement, so each of the five indicators that make up the Ichimoku system provides the reflection of this balance.

However, it was at the beginning of this century that Ichimoku began to be practiced in the West, Elliott (2007) published a book entitled "Ichimoku Charts", which is probably the first book on this methodology in a language other than Japanese.

Outside of Japan, the Ichimoku technique was further described by Linton (2010), Patel (2010) and Matsura (2013), who is considered to be an excellent predictor of trends.

Ichimoku is a system composed of five indicators, each represented by a graphical line, four of which are price averages and one of the lines is the price lag. The various curves of the Ichimoku must be interpreted together, one must not make a decision based on an isolated interpretation of any one of the curves. It is fundamental to have a vision of the whole graph, being able to apply the expression that "the whole is greater than the sum of the parts", (Elliott, 2007).

Cahyadi, Y. (2012), applied this methodology in forex trading, having concluded that the Ichimoku technique has predictive trends value for this market.

Bak (2017) studied the analysis of the Ichimoku technique in the change of GDP dynamics in Poland, concluding that this technique was not a predictor of the change in GDP dynamics of that country.

Shawn, Yanyali & Savidge (2015) studied the profitability of signals generated with the Ichimoku Cloud technique in individual stocks in Japan and the USA, the authors concluded that the Ichimoku charts showed predictive capacity and generated profitable trade signals in these two markets.

METODOLOGY

This article tests the predictive ability of the Ichimoku indicator in Facebook's call options. The construction of the Ichimoku charts was based on the average price of the financial call options of Facebook, and this average price was calculated based on Ask and Bid prices of the options. The time period used in our simulation was the first quarter of 2017, excluding the last week, because in this the volatility is very high, the sample consisted of observations every two and ten minutes, in order to verify the predictive capacity of the Ichimoku indicator in the DayTrader.

The Ichimoku cloud graphs are constructed from five moving averages, which form the following lines: Tenkan-Sen, Kijun-Sen, Chikou-Span, Senkou-Span A, Senkou-Span B, (Elliott, 2007, p. 26).

The Tenkan-Sen line works as a moving average, based on the maximum and minimum price of the previous nine periods, the Kijun-Sen line is very similar to Tenkan-Sen, it is built based on the maximum and minimum prices of twenty-six periods, whereas Senkou-Span A is constructed on the basis of the Tenkan-Sen and Kijun-Sen average of twenty-six periods, (Elliott, 2007).

The Senkou-Span A line is the average between the Tenkan-Sen line and the Kijun-Sen line of twenty-six periods, the Senkou-Span B line in turn is the moving average of the maximum and minimum price of fifty-two periods, being that the interval created by this one with the line Senkou-Span A, form the cloud or Kumo.

The Chikou-Span line determines the signal strength of buying or selling, this line compares past price levels with the current price, being represented by the price displaced twenty-six periods back.

The individual calculation methods for each line of the Ichimoku chart are summarized in table 2 below.

Table n°2: Ichimoku Cloud Chart Construction

Source: Prepared by Authors

| LINE ICHIMOKU | CALCULATION FORMULA |
|--|---|
| TENKAN-SEN | $\frac{max_{9p} + min_{9p}}{2}$ |
| KIJUN-SEN | $\frac{max_{26p} + min_{26p}}{2}$ |
| CHIKOU-SPAN | Delay 26 P |
| SENKOU-SPAN A | $\frac{Tekan Sen_{26p} + Kijun Sen_{26p}}{2}$ |
| SENKOU-SPAN B | $\frac{max_{52p} + min_{52p}}{2}$ |
| The Kumo, or cloud, is the àrea between Senkou-Span A and Senkou-Span B | |

The hypotheses of this research, which are based on the theoretical logic of the paper, based on the revised literature, on the Ichimoku graph, formulate the following hypotheses:

Hypothesis 1: The relationship between the Teken-Sen line and the Kijun-Sen line is indicative of trend.

Hypothesis 2: Cloud analysis allows predicting Bullish or Bearish price trends.

Hypothesis 3: The Chikou-Span line when incorporating the price passed in the futuristic analysis, signals the momentum of the trend.

Hypothesis 4: Strategies can be implemented by analyzing the Ichimoku graph.

ANALYSIS AND DISCUSSION OF RESULTS

When we perform the graphic analysis, we study the input and output signals in the market, and test the hypotheses formulated.

Tenkan-Sen line, red line, is a conversion line, an indicator of market trend, we find that when this line shows oscillations, we are faced with signs of bullish tendencies when the line goes down and bearish when it rises, as can be seen from figure 1. The tankan-Sen line has generally shown to be the closest line to the options quotation line.

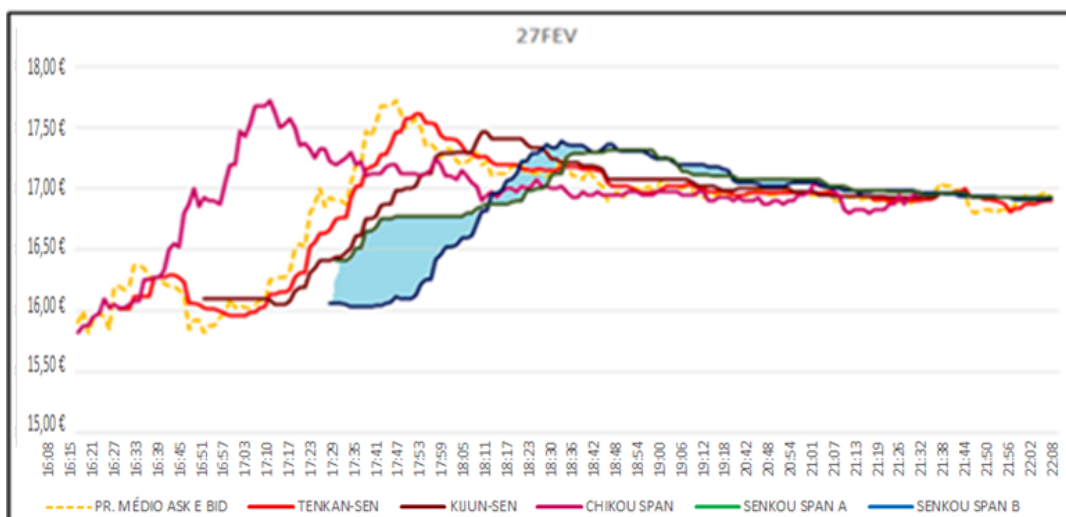


Figure 1: Graph Indicators Ichimoku: Bullish Situation

We observe that the angle of the line indicates momentum of prices, the more inclined the greater the force of the tendency, thus a flatter amplitude, is synonymous with the absence of tendency.

The Kijun-Sen line, brown line, is an indicator of market movement, whenever it crosses the price line, there are changes in the trend, as we can see in the figure 1 and 2.

The Kijun-Sen line mirrors a longer time period than the Tenkan-Sen line, thus proving to be a more reliable indicator of the feeling, strength and price balance than the Tenkan-Sen line.

Whenever prices break one extreme Kijun-Sen tilts towards the price, soon the movement of the options market is defined by the Kijun and the angle of the line defines the force of the movement, in this situation the Kijun-Sen line is indicative of points of entry as well as stop points.

However, the joint analysis of these two lines, Tenkan-Sen and Kijun-Sen are used to identify faster and more frequent signals, by testing H1, we obtained consistent signals, that is, when the Tenkan-Sen line crosses Kijun-Sen bottom upwards, we are facing a buy signal, in turn we obtain a signal of sale when the crossing of these lines between them, is in the opposite direction, from top to bottom, which allows us to affirm that H1 is verified, since these two lines are predictive of the trend and movement of the options market.

In relation to the cloud, we can see that the trend of the price quotation tends to show signs that can be determined with a simple look at the position of the price relative to Kumo, whereas we are facing a Bull situation when the price is higher than Kumo, and we are facing a Bear situation when the price is lower than Kumo.

Similarly, by the analysis of the Senkou-Span A lines, green line and Senkou-Span B, blue line, we conclude that when Senkou-Span A is above Senkou-Span B, we are before a Bullish cloud, signal of high and when it is below Senkou-Span B it can represent a bearish trend signal, ie we are facing a Bearish cloud, and the moment of inversion occurs when crossing these lines, as can be seen from figure 1 and figure 2.

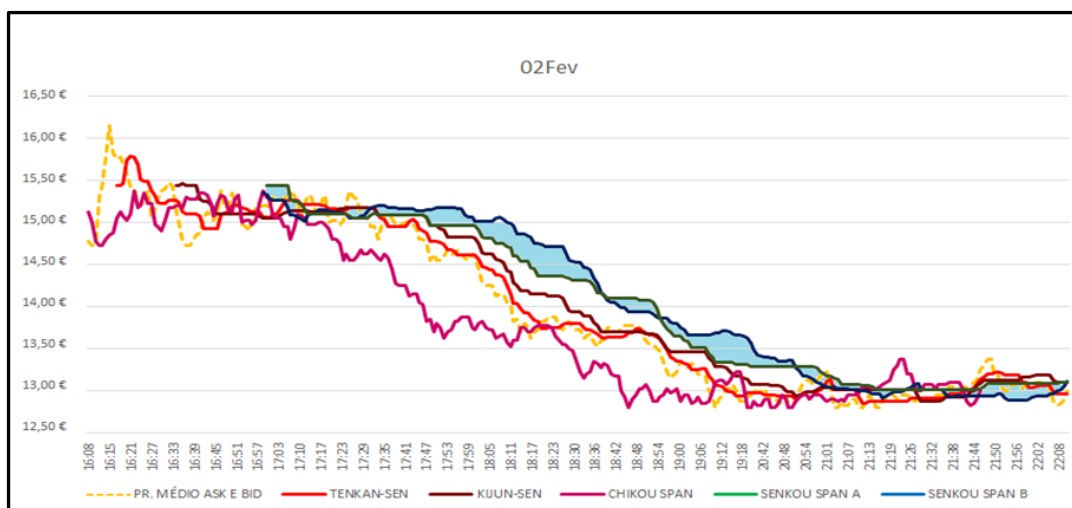


Figure 2: Graph Indicators Ichimoku: Bearish Situation

We conclude also that the resistances and supports are identified with the presence of the cloud, the resistance zone, when the quotation goes up and enters the cloud from below, and the support zone when the quotation falls and enters the cloud from above.

A look at the cloud, shows that when it is narrow, the price of the options have little volatility and *ceteris paribus*. Regarding the strength of the signals given by the Ichimoku indicators, we find that when they occur above the cloud, we are faced with upward signals, and when they happen inside the Kumo, they are consolidation and when they occur below the cloud they are bass signals. Confirming the existence of a relationship between Kumo and Bullish and Bearish tendencies, as can be seen from figure 2.

The essence of trading must occur in the direction of the greater trend, the signs that are contrary to the existing trend, however are considered weaker, whenever the joint analysis anticipates otherwise.

The most robust and assertive signs of the Technical and Graphic Analysis of our sample are when the signals are coincident in the two different period of time graphs, two and ten minutes.

The graph shows a negative trend when the Chikou-Span line, pink line, is below the quotation line, by contrast the chart shows a positive trend when the same line is positioned in a zone higher than the quotation.

Based on the literature, the Chikou-Span line, the pink line, is the line that allows the incorporation of the past price in the futuristic analysis of the value of the options, thus signaling the momentum of the trend, allowing a quick comparison between the relations of the current price with the twenty-six delayed periods, helping to define the trend.

When the Chikou-Span line is above the price line, there is a greater potential for prices to continue to rise, when the Chikou-Span line falls below the price line, there is a greater probability of a fall, as prices tend to follow the trend, as can be seen from figure 1 and 2.

This line provides clear points of support and resistance, being possible to draw horizontal lines at the extreme points of the Chikou-Span and use them in trade decisions.

The behavior of asset prices, including financial options, is the result of a complex and highly unpredictable process, and the synergistic use of the various Ichimoku lines allows the filtering of opportunities that present greater asymmetry between return and risk, providing higher profits.

The strategies found by our Technical and Graphic Analysis, which the investor can follow, depending on their investment objective, short or long positions, are summarized in table 3.

Table n°3: Summary of Ichimoku Strategies Applied to Options
Source: Prepared by Authors

| INDICATOR | PURCHASE | SELL | INDIFFERENT |
|--------------------------------|------------------------------|------------------------------|-------------------------------|
| Tenkan-Sen x Kijun-Sen | Tenkan-Sen > kijun-Sen | Tenkan-Sen < kijun-Sen | Tenkan-Sen = kijun-Sen |
| Price x Tenkan-Sen | Next = Strong Far = Weak | Next = Strong Far = Weak | ----- |
| Price x Kijun-Sen | Next = Strong Far = Weak | Next = strong Far = Weak | ----- |
| Angle x Tenkan-Sen e Kijun-Sen | Up | Down | Plan |
| Tenkan-Sen x Kumo | Out | Out | Inside |
| Kijun-Sen x Kumo | Out | Out | Inside |
| Price x Kumo | Price Above Kumo | Price below Kumo | Price within Kumo |
| Chikou-Span x Price | Upper | Down | Equal |
| Chikou-Span x Kumo | Out | Out | Inside |
| Senkou-Span A x Senkou-Span B | Senkou-Span A > Senkou-SpanB | Senkou-SpanA < Senkou-Span B | Senkou-Span A = Senkou-Span B |
| Angle x Senkou-Span A | Up | Down | Plan |
| Angle x Senkou-Span B | Up or flat | Down or flat | Plan |

CONCLUSIONS

The Ichimoku indicator took decades to be known, and the translation difficulty was pointed out as the main argument for this delay, but after the transfer of knowledge, this indicator is gaining more and more the admiration of the trades, and is becoming its natural choice, due to its easy and fast analysis.

The main objective of the present study was to test the functionality of the predictive capabilities of the Ichimoku indicator in Facebook options, which allowed us to conclude that it has predictive capacity and allows the investor to follow some investment strategies by analyzing the indicator, maximize profitability while minimizing risk.

We conclude that the Teken-Sen line and the Kijun-Sen line, are indicative of trend, we also concluded that these lines provide buy and sell signals. Regarding the cloud, we conclude that it allows us to identify Bullish and Bearish quotes, indicating the expected price volatility, and allows us to obtain support and resistance points.

Regarding the Chikou-Span line, we conclude that, by incorporating the past price in the futuristic analysis, it signals the momentum of the trend. The Ichimoku indicator is a novelty compared to the usual indicators of Technical and Graphic Analysis, because once calculated, it is projected forward in the chart, predicting the future, and simultaneously including historical analysis. These characteristics allow the investor to identify the price equilibrium, more easily and quickly, thus assisting him in the investment decision process. Better computer tools on online brokers make easy to use Ichimoku technology.

However, we feel a great challenge and immense difficulties in the production of this work, because it is a field that is not very much explored scientifically.

These constraints, difficulties, serve as an opening to future work, whether in the options market or in other financial markets.

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Effective message against child labor –selection process of the emblem for a social campaign

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ABSTRACT

Child labor remains one of the major issues of modern world. Preventing or eliminating this problem, apart of making children's life happier, would have significant economic benefits. One of the popular strategies that are applied to achieve this goal is awareness-rising and it is realized through social campaigns. To prepare an effective campaign it is necessary to ensure that before launching, its elements are properly tested by the target group in a survey. The article presents a method based on a vector calculus and a statistical measure of variation, allowing to analyze data containing assessment of social campaign emblem, taking into account the inaccuracies appearing in respondents' answers. To collect the data questionnaires were used. Ranking of objects was created with the use of a method proposed by Authors. The results have shown how important in the evaluation and ranking process is taking into account the inaccuracies contained in the information. If this aspect of the data was omitted, the obtained ranking of projects could be falsified, and thus mislead the creators of the campaign as to the quality of the "best" emblem.

Keywords: *child labor, social campaign, ranking, inaccuracy.*

INTRODUCTION

The problem of child labor is massive and is still far from its elimination. Wherever poverty exists, child labor is present as well, and it is one of the most important issues in the developing countries. However, not all work done by children should be classified as child labor that should be eradicated. Children's or adolescents' participation in work that does not affect their health and personal development or interfere with their education, is generally regarded as being something positive. According to the International Labour Organisation (ILO) is often defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development (Hilowitz et al., 2004, p. 16). The data show that in 2016 over 152 million individuals, aged 5 – 17, were in child labor (ILO, 2017, p. 23). Preventing or eliminating this problem would have substantial implications. There are two principal benefits that it could bring from the economic point of view. These would be the added productive capacity a future generation of workers due to their increased education, and the economic gains anticipated from improved health due to the elimination of the worst forms of child labor (ILO, 2004, pp. 67-82). Of course, there are also many other benefits that can be mentioned and that are resistant to economic quantification, such as enhanced opportunities for personal development and social inclusion. To achieve these benefits, a lot of different strategies are used. Mainly there are based on education, but one of the keystones of projects to prevent or eliminate child labor is also awareness-rising. People need to know about this problem, and why it is destructive both to the children and society (Grisewood, Brand, & Ruiz, 2008, p. 44). Very popular approach used to achieve this goal is a social campaign, also known as public awareness campaign. It is defined as “a comprehensive effort that includes multiple components (messaging, media relations, government affairs, budget, etc.) to help reach a specific goal” (Bouder, 2013, Public Awareness Campaign section, para. 1). Usually, a campaign attempts to raise awareness

about a key issue and induce a desired positive behavioral change (Coffman, 2002, p. 6). Among the most widespread activities that are undertaken within the framework of social campaigns, primarily: advertising campaigns, press publications, brochures, events and happenings, and sometimes more direct educational actions, can be mentioned.

The selection of appropriate activities depends primarily on the subject of the campaign and the type of target group. Not always the campaign must be associated with spectacular undertakings – sometimes even a small element, if well prepared, can make a big difference. Regardless of the scale of actions taken, the overriding goal of any campaign is to change attitudes or behavior among its recipients. To achieve this goal, it is extremely important to prepare the visual identification of the campaign. One of the important elements of such identification can be the campaign emblem – a simple picture, clearly associated with promoted views or behaviors, which will be easy to remember. As the other components, it must be designed in the right way. Mistakes made at this stage can cause the campaign to be ineffective or even harmful for the case it is supposed to promote. Before such visual identification of the campaign will be published, it is necessary to carry out research that will allow for answering following questions: whether the prepared image pleases the recipients, and whether it evokes appropriate associations. In this type of research, both quantitative and qualitative methods are used. The first group includes, above all, polls, in the second group there are in-depth individual interviews and focus group interviews (Shukla, 2008, p. 33-34; Smith & Albaum, 2010, p. 3).

Although these methods are very widespread and most commonly used, their usage is associated with a certain risk. In the case of comparing different projects for the same campaign, very often, the opinions expressed by the respondents may be inconsistent, i.e. they will not be able to create the ranking of the assessed objects from the best to the worst. In such situation, it can be said that the data collected by the questionnaire method is burdened with a certain inaccuracy. In order to obtain valuable results during further analysis, this inaccuracy must be taken into account. The goal of this article is to present a method based on a vector calculus and a statistical measure of variation, allowing to analyze data collected through questionnaires, taking into account the inaccuracies appearing in respondents' answers and, using this method, to find an appropriate emblem for social campaign against child labor. The first part of the article describes the mathematical assumptions of the method and the way of selecting the best of the assessed objects. The second part shows the application of the presented method in practice – for choosing the best emblem for a social campaign regarding the problem of child labor.

VECTOR SPACE AND INACCURATE DATA

The information collected through questionnaire is subject to inaccuracy. Such information is recorded in the form of numbers, and the level of inaccuracy must be stored in some way. There are several different methods that allow this type of storage. Among them are: fuzzy arithmetic (Hanss, 2013), interval arithmetic (Jiang, Fu, Ni & Han, 2016), affine arithmetic (Rocco, 2013) and histogram arithmetic (Petrushin, Nikulchev, & Korolev, 2015). All of these approaches have their limitations. They do not give the possibility of calculations in the vector space. This leads to incorrect calculation results. The transformation of coordinates is an example. If the object is rotated four times by 90 degrees, then the same object should be obtained. In the case of fuzzy arithmetic, the degree of inaccuracy will increase. This is because the inaccuracy cannot be reduced. In the case of calculations in the vector space, this is not logical. The inaccuracy will depend on the direction from which one looks at the object, so during object's transformation it can be both increased and decreased.

The data about inaccuracy can also be included in statistical measures of variation. Having multiple evaluation of the object by the same person made at certain intervals, the range, the difference between quartiles, variance, etc. can be determined. In this case, these parameters describe the inaccuracy of the information. If the range is used for calculations, the interval arithmetic can be used. The use of the range may, however, be disadvantageous due to the sensitivity to values that are outliers. They appear rarely and have a big impact on the result. Therefore, the obtained results may have a large random character.

From the above-mentioned statistical measures, the use of variance may be interesting to describe inaccuracies. It is less sensitive to outliers, and due to the method of determining its value it is relatively easy to carry out calculations. However, it cannot be applied to calculations in vector spaces directly because it cannot be negative. However, the difference between two variances can already be negative. Therefore, an increment in variance, which can be combined with the average value of the person's assessments, can be used for the calculation. The use of these two elements allows for calculations in the vector space (Borawski, 2012), what will be presented later in the article.

To describe the objects in the vector space, considering inaccuracies, one can use the mean value \bar{c}_j , increment of the variance and the covariance $\sigma_{j,k}$:

$$\vec{X} = (\bar{c}_1; \bar{c}_2; \dots; \bar{c}_M; \sigma_{1,1}; \sigma_{1,2}; \dots; \sigma_{M,M}), \quad (1)$$

where i is the vector number (number of the object represented by the vector), and M is the number of objects, and:

$$\sigma_{k,k} = \Delta \sigma_k^2. \quad (2)$$

The vector \vec{X} represents the set of points in the M -dimensional space. The mean values determine the coordinates of the center of this set of points, the values of variance increments determine the distribution of this set of points along particular axes (Fig. 1).

Covariance is determined by the relationship between coordinates on individual axes, which translates into "angles" in relation to the axis around which the set of points is "rotated".

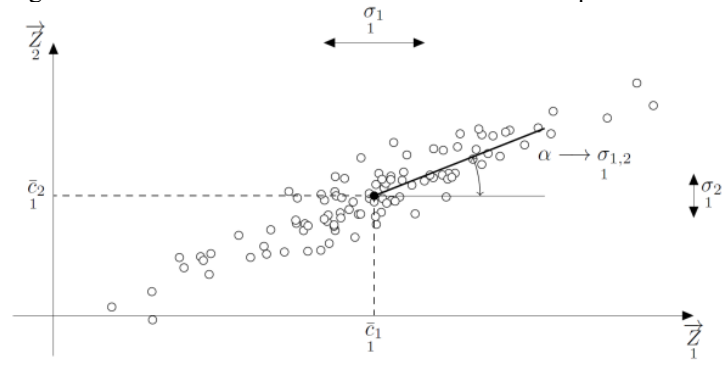


Figure 1: A set of points in 2D space.

\vec{Z}_1 and \vec{Z}_2 are vectors forming the coordinate system (in this case two-dimensional). \bar{c}_1 and \bar{c}_2 are average values, σ_1 and σ_2 increments of variance mean values being the vector's \vec{X} coordinates. Covariances determine the relationship between coordinates on individual axes, which translates into "angles" in relation to the axis at which the set of points is "rotated". In the Fig 1, covariance between vector coordinates \vec{X} on axes \vec{Z}_1 and \vec{Z}_2 has been marked by $\sigma_{1,2}$, α is the angle that translates into covariance $\sigma_{1,2}$.

The set of all possible vectors \vec{X}_i will be referred to as \mathbb{L}_V . In this set you can define the operation of addition as:

$$\forall \vec{X}_i \in \mathbb{L}_V \wedge \forall \vec{X}_j \in \mathbb{L}_V: \vec{X}_i + \vec{X}_j \equiv (\bar{c}_1 + \bar{c}_1; \bar{c}_2 + \bar{c}_2; \dots; \bar{c}_M + \bar{c}_M; \sigma_{1,1} + \sigma_{1,1}; \sigma_{1,2} + \sigma_{1,2}; \dots; \sigma_{M,M} + \sigma_{M,M}) \quad (3)$$

The addition above maps the sum of independent random variables. Vector \vec{X}_i and \vec{X}_j coordinates can be treated as random variables. Figure 3 shows three sets of points. Two of them are five elements

(white and light gray points). They are related to vectors \vec{X}_1 and \vec{X}_2 . These vectors can be summed up. If the random variables associated with the coordinates of these vectors are independent, then each point associated with the vector \vec{X}_1 should be added to every point associated with the vector \vec{X}_2 . A collection of 25 points will be created in this way. In Figure 2, they are presented in the form of dark gray dots. The average values of these points are the sum of the mean values of white and light gray points. An analogous relationship occurs between variances and covariances.

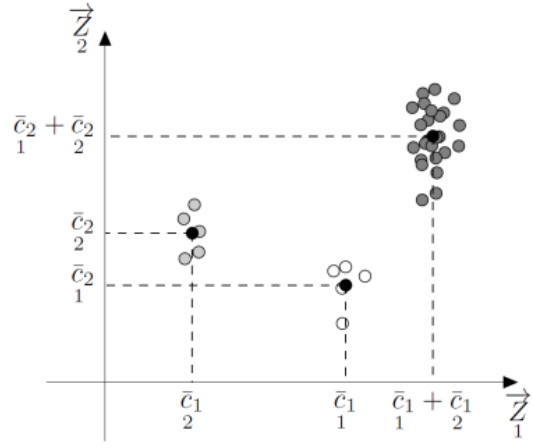


Figure 2: The sum of the sets of points.

The addition operation in the \mathbb{L}_V set meets all the axioms of the abelian group:

1. Commutativity: $a \cdot b = b \cdot a$,
2. Associativity: $(a \cdot b) \cdot c = a \cdot (b \cdot c)$,
3. Identity element (e): $e \cdot a = a \cdot e = a$. Such element in this case is:

$$E = (0; 0; \dots; 0; 0; 0; \dots; 0). \tag{4}$$
4. Inverse element (a): $a + (-a) = e$. Inverse element for \vec{X}_i and \vec{X}_j is equal to:

$$-\vec{X}_i = \left(-\bar{c}_{1,i}, -\bar{c}_{2,i}, \dots, -\bar{c}_{M,i}, -\sigma_{1,1,i}, -\sigma_{1,2,i}, \dots, -\sigma_{M,M,i} \right). \tag{5}$$

Values \bar{c}_j and $\sigma_{j,k}$ are described using real numbers. The fulfillment of the above-mentioned axioms results from the fulfillment of these axioms for adding in a set of real numbers. The set of real numbers can be treated as a set of scalars related to a set of vectors \mathbb{L}_V . They fulfill the axioms of the vector space:

1. The \mathbb{L}_V set with the addition operation is an abelian group, as shown above.
2. On the elements of the \mathbb{L}_V set and the field of real numbers, the multiplication of scalar by vector can be defined:

$$a\vec{X}_i = \left(a\bar{c}_{1,i}, a\bar{c}_{2,i}, \dots, a\bar{c}_{M,i}, a\sigma_{1,1,i}, a\sigma_{1,2,i}, \dots, a\sigma_{M,M,i} \right), \tag{6}$$

3. Multiplication of the scalar by the vector has a neutral element e , which is also a neutral element of multiplication, in the field of real numbers: $e\vec{X}_i = \vec{X}_i$.
4. Compatibility of scalar multiplication with field multiplication: $r \left(s\vec{X}_i \right) = (rs)\vec{X}_i$.
5. Distributivity of scalar multiplication with respect to field addition: $(r + s)\vec{X}_i = r\vec{X}_i + s\vec{X}_i$.
6. Distributivity of scalar multiplication with respect to vector addition in the set \mathbb{L}_V : $r \left(\vec{X}_i + \vec{X}_j \right) = r\vec{X}_i + r\vec{X}_j$

The vector \vec{X}_i may be subject to transformations, such as translation, rotation and scaling. The mean values $\bar{c}_1, \bar{c}_2, \dots, \bar{c}_M$ are transformed in the same way as the usual coordinates of points:

$$\bar{c}'_j = \sum_{k=1}^M mt_{j,k} \cdot \bar{c}_k, \quad (7)$$

and the covariance values from the following formula:

$$\sigma'_{j,k} = \sum_{o=1}^M \sum_{p=1}^M mt_{j,o} \cdot mt_{k,p} \cdot \sigma_{o,p}, \quad (8)$$

Because of transformation, mean values, variances and covariances may change. This is illustrated in Figure 3. The collection of white points has been transformed. As a result, a set of gray points was created. Mean values and standard deviation along the x_1 axis has decreased.

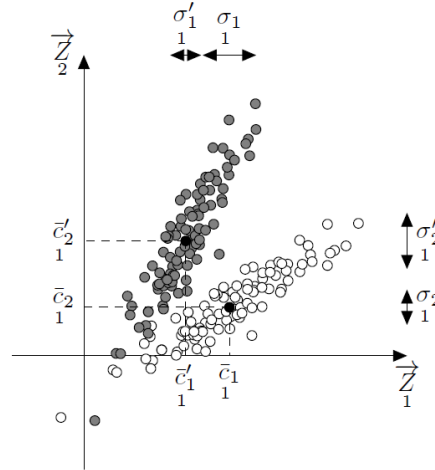


Figure 3: Transformation of a set of points.

CHOICE OF BEST EMBLEM

The transformation of vectors presented earlier can be used to organize objects according to the value of a given criterion. When there are more criteria, their values are aggregated to allow describing the object with a single number, which is referred to as an aggregate or synthetic measure. As a result of the use of this kind of measure, it becomes possible to compare objects from the point of view of many features at the same time (Babbie, 2013, p.164). The simplest ranking can be done by multiplying the criteria values for individual objects by weights. If the criteria for individual objects are marked by y_j^i and the weight values by ww_j , where i is the object number, and j is the criterion number, the value of the synthetic measure allowing the ordering of objects can be determined as follows:

$$\mu_i = \sum_{j=1}^M ww_j \cdot y_j^i. \quad (9)$$

This operation has a vector interpretation. Values of ww_j weights can be treated as vector \overline{WW} coordinates. The vector \overline{WW} can be reduced to a unit vector \overline{W} :

$$w_i = \frac{ww_i}{\sqrt{\sum_{j=1}^M ww_j}}. \quad (10)$$

The \overline{W} vector can be treated as a one-dimensional coordinate system to which the vectors \vec{Y}_i are transformed (Fig. 4). This way vectors \vec{Y}'_i are created:

$$y'_{ik} = \begin{cases} \sum_{j=1}^M w_j \cdot y_j & \text{for } k = 1, \\ 0 & \text{for } k = 2, 3, \dots, M. \end{cases} \quad (11)$$

The values of the transformation matrix will be as follows:

$$mt_{k,i} = \begin{cases} w_i & \text{for } k = 1, \\ 0 & \text{for } k = 2, 3, \dots, M. \end{cases} \quad (12)$$

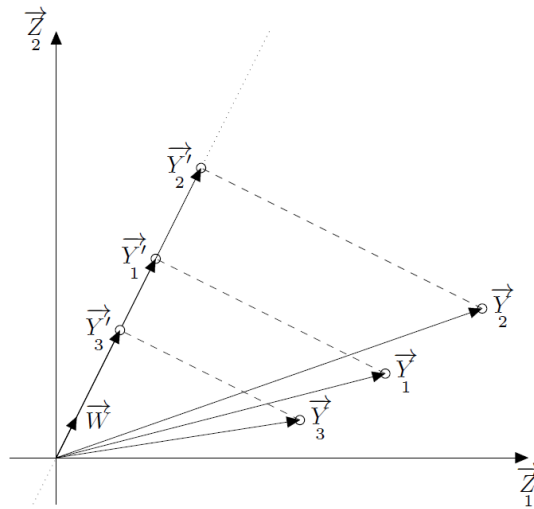


Figure 4: Creating a ranking by transforming vectors.

The transformation matrix can be used to transform vectors \vec{X}_i . As a result of the transformation, vector \vec{X}'_i will be created. Its coordinates will be mostly equal to zero. Non-zero values will only have: \bar{c}_i and $\sigma_{i,1}$. This first one is synthetic measure value, and the second one can be equated with the degree of uncertainty of the obtained result.

The ranking method presented earlier was used to select the best emblem for social campaign to limit child labor. The campaign is fictional but could be implemented in practice on an international scale. In countries struggling with the problem of child labor, it could raise awareness of this problem and contribute to its reduction. In developed countries, it could promote attitudes of conscious shopping and avoiding products that may have been produced unethically. In the latter case, the campaign emblem project could act as a certificate for products that were created with respect for children's rights (analogous to the Fairtrade certificate). Regardless of how it could be used later, the campaign logotype should be well perceived in the context of the appearance and strength of association with its subject matter. The projects that were evaluated are presented in Figure 5. The study was conducted with the participation of 11 people. Campaign emblems were compared in pairs. It was necessary to determine how much the first of the badges being compared is better than the second on a scale of 5 to -5. Value 5 meant that the first of the emblems being compared is much better than the other, 0 - they are comparable, and -5 – the second is much better than the first one. All possible pairs of badges were compared. Each examined person made 12 comparisons. A screenshot with an example comparison is shown in Figure 6.



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Figure 5: Badges used in the experiment.



Figure 6: Comparison of projects in pairs.

The result of the study were comparisons matrices, two for each examined person. The first was related to the appearance criterion and the second to the association with the subject of the campaign. An example of a comparison matrix for one person for the appearance criterion is presented in Eq. (13).

$$C = \begin{matrix} & \begin{matrix} badge\ 1 & badge\ 2 & badge\ 3 & badge\ 4 \end{matrix} \\ \begin{matrix} badge\ 1 \\ badge\ 2 \\ badge\ 3 \\ badge\ 4 \end{matrix} & \begin{bmatrix} 0 & -4 & -3 & -3 \\ 4 & 0 & 1 & 2 \\ 2 & 2 & 0 & 0 \\ 4 & 0 & 0 & 0 \end{bmatrix} \end{matrix} \quad (13)$$

The comparison matrix is a square matrix, and on its main diagonal are always zeroes. The size depends on the number of objects being compared. At four objects it is a 4x4 matrix. Values in the matrix show how much one object is better than the other. For example, the value 2 in the third row of the second column says that badge 3 is better than badge 2. The value -3 in the first row of the third column means that the badge 1 is worse than badge 3. It should mean that the comparison matrix ought to be symmetric. However, it is not. This can be seen in the example where the examined person stated that the badge 3 is better than the badge 1 at level 2, but the badge 1 is worse than badge 3 at level -3. This is due to the inconsistency of the respondents' answers.

The object ratings in the comparison matrix are relative. To select the best object, one reference point should be selected for the entire matrix, i.e. one badge against which other badges will be evaluated. If the reference would be k -th object, then it is possible to calculate the values of the comparison matrix with respect to this object:

$$c'_{i,j} = c_{i,j} - c_{k,j}, \quad (14)$$

where $c'_{i,j}$ is an element of the comparison matrix calculated with respect to the k -th object, and $c_{i,j}, c_{k,j}$ are elements of the usual comparison matrix. An example of a comparison matrix calculated relative to the first object for the first examined person is following:

$$C' = \begin{matrix} & \begin{matrix} badge\ 1 & badge\ 2 & badge\ 3 & badge\ 4 \end{matrix} \\ \begin{matrix} badge\ 1 \\ badge\ 2 \\ badge\ 3 \\ badge\ 4 \end{matrix} & \begin{bmatrix} 0 & 0 & 0 & 0 \\ 4 & 4 & 4 & 5 \\ 2 & 6 & 3 & 3 \\ 4 & 4 & 3 & 3 \end{bmatrix} \end{matrix} \quad (15)$$

Each row contains the assessment of certain objects. The evaluations, apart of the reference object, are different from each other. This is particularly well seen for badge 3. Because the first object is a reference object, the differences in evaluations of other objects are influenced by the heterogeneity of their assessments, as well as heterogeneity of the assessments of the reference object. To reduce the impact of such heterogeneity, all matrices C'_k can be averaged to obtain the average comparison matrix.

This matrix can be calculated directly from the matrix C :

$$c''_{ij} = c_{ij} - \frac{\sum_{k=1}^N c_{kj}}{N}, \quad (16)$$

where N is the number of objects being compared.

For further calculations, the average values of ratings:

$$\bar{c}_i = \frac{\sum_{j=1}^N c''_{ij}}{N}, \quad (17)$$

and their variances:

$$\sigma_i = \frac{\sum_{j=1}^N (c''_{ij} - \bar{c}_i)^2}{N} \quad (18)$$

can be used.

Values \bar{c}_i , σ_i and c''_{ij} are calculated for each criterion and each subject, therefore they can be marked as $\bar{c}_{k,j,i}$, $\sigma_{k,j,i}$, $c''_{i,p,j,k}$ where i, p are the numbers of objects, j is a number of examined person, and k is the criterion number. If the number of criteria is greater than one, then, between the criteria, covariance should be determined:

$$\sigma_{k,o} = \frac{\sum_{p=1}^N (c''_{i,p,j,k} - \bar{c}_{k,j,i}) \cdot (c''_{i,p,j,o} - \bar{c}_{o,j,i})}{N}. \quad (19)$$

Values $\bar{c}_{k,j,i}$, $\sigma_{k,j,i}$, and $\sigma_{k,o}$ create a vector in the M -dimensional space:

$$\vec{X} = (\bar{c}_{1,j,i}; \dots; \bar{c}_{M,j,i}; \sigma_{1,1,j,i}; \sigma_{1,2,j,i}; \dots; \sigma_{M,M,j,i}). \quad (20)$$

The transformation matrix, calculated according to the Eq. 12, was used to determine the value of the assessment for the badges. Weight for the first criterion was equal to 2 and weight for the second criterion was 1. The weights were normalized according to Eq. 9. The calculated values are presented in Table 1. These values have been visualized in Figure 7. The dots indicate the average values of the measure. The height of rectangles is equal to

two standard deviations ($2\sqrt{\sigma'_{1,1,j,i}}$). The visualization shows that some people did not distinguish any badge in

any special way (person 3 and 6). Some people, however, preferred certain badges, but the difference in preference is so small that it does not allow to unequivocally indicate that these badges are clearly better according to these people (person 7 and 8). The average values of measures for all objects were determined (Table 2). Visualizations are presented in Figure 8.

Table 1: Values of measure for individual persons and badges

| Person | Badge 1 | | Badge 2 | | Badge 3 | | Badge 4 | |
|--------|------------------|------------------------------------|------------------|------------------------------------|------------------|------------------------------------|------------------|------------------------------------|
| | $\bar{c}'_{j,1}$ | $\sqrt{\frac{\sigma'_{1,1}}{j,1}}$ | $\bar{c}'_{j,2}$ | $\sqrt{\frac{\sigma'_{1,1}}{j,2}}$ | $\bar{c}'_{j,3}$ | $\sqrt{\frac{\sigma'_{1,1}}{j,3}}$ | $\bar{c}'_{j,4}$ | $\sqrt{\frac{\sigma'_{1,1}}{j,4}}$ |
| 1 | -2.71 | 0.35 | 0.75 | 0.69 | 0.75 | 1.06 | 1.20 | 0.84 |
| 2 | 4.19 | 2.52 | -5.87 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| 3 | -0.34 | 1.76 | 0.22 | 2.27 | -0.11 | 2.09 | 0.22 | 2.35 |
| 4 | -0.84 | 1.17 | -2.18 | 0.71 | 2.85 | 0.36 | 0.17 | 0.98 |
| 5 | -0.08 | 1.41 | 4.05 | 2.05 | -5.79 | 1.37 | 1.82 | 1.83 |
| 6 | -1.01 | 2.16 | 0.22 3 | 2.52 | 0.34 | 2.77 | 0.45 | 2.43 |
| 7 | -1.51 | 2.33 | 1.29 | 1.47 | 0.39 | 2.04 | -0.17 | 0.98 |
| 8 | -0.28 | 1.32 | 0.28 | 1.95 | 0.84 | 0.76 | -0.84 | 1.64 |
| 9 | 3.77 | 1.55 | 0.42 | 1.70 | -3.05 | 1.80 | -1.15 | 1.97 |
| 10 | 3.47 | 1.49 | 3.13 | 1.13 | -3.91 | 0.88 | -2.68 | 1.63 |
| 11 | 0.61 | 0.64 | -5.42 | 0.43 | 1.73 | 1.26 | 3.07 | 1.65 |

Differences in the average values obtained are insignificant compared to standard deviations, so that a badge that is significantly better than the others cannot be distinguished.

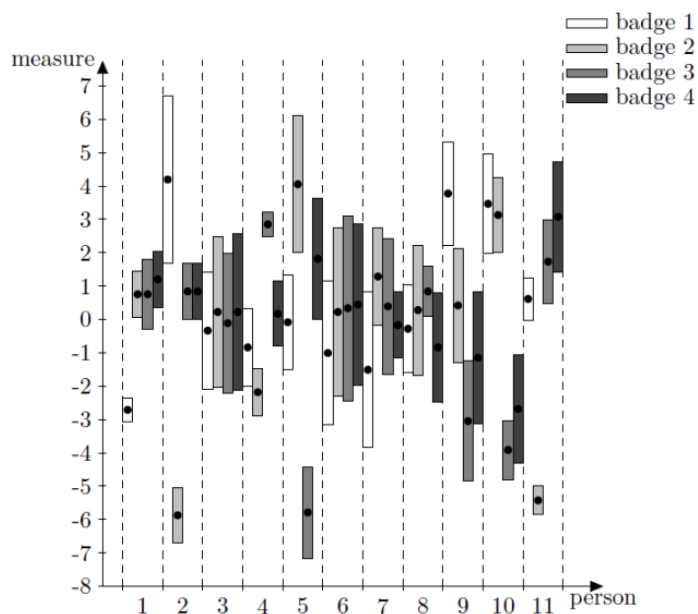


Figure 7: Visualization of the measurement value

Table 2: Mean values of the measure for individual people and projects

| Badge 1 | | Badge 2 | | Badge 3 | | Badge 4 | |
|------------------|------------------------------|------------------|------------------------------|------------------|------------------------------|------------------|------------------------------|
| $\bar{c}'_{j,1}$ | $\sqrt{\sigma'_{1,1}_{j,1}}$ | $\bar{c}'_{j,2}$ | $\sqrt{\sigma'_{1,1}_{j,2}}$ | $\bar{c}'_{j,3}$ | $\sqrt{\sigma'_{1,1}_{j,3}}$ | $\bar{c}'_{j,4}$ | $\sqrt{\sigma'_{1,1}_{j,4}}$ |
| 0.48 | 1.52 | -0.28 | 1.43 | -0.47 | 1.39 | 0.27 | 1.56 |

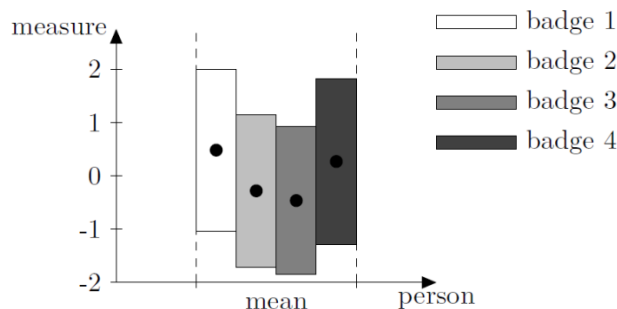


Figure 8: Visualization of the mean measurement value

CONCLUSIONS

The presented method of analyzing questionnaire data, considering the inaccuracy of respondents' answers, was piloted in a case study focusing on the assessment of social campaign logotype projects. The obtained results allowed to show that the respondents give very inconsistent answers regarding their opinions on the presented emblems. The analysis of the data allowed to show how important in the evaluation and ranking process is to consider the inaccuracies contained in the information obtained. If this aspect of the data collected in the study was omitted, the obtained ranking of projects could be falsified, and thus mislead the creators of the campaign as to the quality of the "best" logotype. In order to obtain the final ranking of objects and be able to choose the most appropriate graphic representation Due to the promising results, this method will be developed in further research and will become part of the methodology developed to assess the effectiveness of media messages in social campaigns.

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CONSUMER BEHAVIOUR IN THE ASPECT OF SUSTAINABLE DEVELOPMENT

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ABSTRACT

In the contemporary world, the care for the state of the environment becomes very important, which is reflected in the behavior of consumers on the market. The basic need of consumers is to function and achieve their own goals, as well as make their values true, which helps them to get satisfied and have a decent life. The economy of a “total consumer”, whose only goal is to have more and more and to use more and more, has become widespread, therefore the whole economy seeks unlimited consumption. The solution is the idea of sustainable development, which combines economic development, environmental protection and social justice on a local, regional and global scale, at the same time opposing the pursuit of continuous economic growth, regardless of the social and environmental costs incurred.

The aim of the article is to analyze consumer behavior in the context of sustainable development. The article defines the concept of sustainable development and consumer behavior. Further, the problem of balanced consumption is approximated.

Keywords: *Sustainable development, consumption, consumer behaviour*

INTRODUCTION – CONCEPTUAL APPARATUS

The concept of sustainable development is variously understood in the literature on the subject. According to B. Poskrobko (1997, pp. 10-11), three ways of understanding sustainable development can be distinguished: -a socio-philosophical idea, in which attention is paid to the harmonization of the whole connection between civilizational human activity and the natural environment, -the direction of economic development which draws attention to the necessity of comprehending the economic, social and ecological problems of contemporary times, perceiving development processes in the long run (so-called intergenerational justice) and a reasonable allocation of renewable resources that will allow them to be restored (Pearce, 1987, pp. 9-17), -the direction of scientific research in which sustainable development is understood interdisciplinary, as

a consequence of which the economic, spatial, political, demographic and ethical order are treated together (Kielczewski, 2008, p. 32)¹.

According to D. Pearce and R.K. Turner (1990, pp. 10-11) "Sustainable development consists in maximizing the net benefits of economic development, while protecting and ensuring recovery of usability and quality of natural resources over a long time horizon". Generally, sustainable development is defined as the doctrine of economics, assuming the possibility of satisfying the needs felt by the present generation at the level allowed by available civilizational development, without reducing the chances for them to be met by future generations. This definition refers to the report of the World Commission for Environment and Development, under the direction of G.H. Brundtland in which the main focus is on intergenerational justice. Whereas, for J.M. van den Berg and P. Nijkamp sustainable development is a civilization development in which the forms and dynamics of economic activity, institutions, lifestyles and population size are such that every person of current and future generations will be provided with an appropriate quality of life, and all aspects of this development are protected by the availability of natural resources, ecosystems and life support systems (van den Berg, Nijkamp, 1987, p. 11, for: Kielczewski, 2008, p. 8). In the Agenda 21-sustainable development objectives are included in four basic categories (Keating, 1993; Borew, 1997):

-economic goals: eg. change in consumption patterns, international cooperation for sustainable development,

-social goals: eg. combating poverty, protecting cultural diversity,

-environmental goals: eg. protection of biodiversity, sustainable farming and waste management,

-institutional goals: eg. integration of environmental policy with economic and social policy, development of scientific research for sustainable development, strengthening the role of the most important social groups in decision-making processes (Zalega 2015, pp. 5-6).

In the literature on the subject there are various definitions of "consumer behavior" on the market. Many of them stress the relationship of behavior with the needs and means that serve to satisfy them. M. R. Solomon defines "consumer behavior" as a separate area in which the scope enters the study of processes occurring at the moment when a person or group chooses, buys, uses or rejects products, services, ideas and experiences to satisfy their needs and desires. A. Jachnis asserts that the term "consumer behavior" refers to those consumer behaviors that are associated with the acquisition, use, evaluation and disposal of products and/or services along with decisions preceding and conditioning these activities. Other creators of the concept of "consumer behavior" are G. Antonides and F. van Raaij who believe that consumer behavior includes mental and physical activities of individuals and small groups, regarding the orientation, buying, using and disposing of the product and household production, rare goods and services from the market, enabling the

¹ The first Report of the Roman Club from 1969 was of fundamental importance for starting the discussion on the direction in which socio-economic development should follow in order not to stop the economic growth leading to the economic and ecological crisis. In the report "Our Common Future" (1972, Stockholm) sustainable development was defined for the first time (Brundtland, 1991). On the second Earth Summit (1992, Rio de Janeiro), the idea of sustainable development was implemented. Five documents were adopted there: Agenda 21, the Rio Declaration on Environment and Development, the Framework Convention on Climate Change, the Convention on Biodiversity and the Declaration on Forests. The most important document is Agenda 21, a program of activities that should be undertaken in the 21st century in the area of the need to protect natural resources and manage them rationally (sustainable development). At the next Earth Summit (2002, Johannesburg) the Johannesburg Plan of Implementation set out 3 pillars: ecological, social and economic. For: Zalega, T., Sustainable development and sustainable consumption, in: Consumption and Development, 2015, No. 4, pp. 3 -25.

consumer to function and achieve their goals and realizing their values, and thus achieve satisfaction and prosperity, taking into account the short-term and long-term effects as well as individual and social consequences.

Fromm enriched the philosophical and sociological analysis of the industry and the mass consumption it generated by the psychological dimension. He believed that the organization of capitalist societies was completely subordinated to economics; they are "oriented maximally on the production of material goods and consumption", which results in "killing an individual by transforming them into a completely passive and powerless in the face of bureaucracy consumer". Their members lost "control over their own system". Fromm asserts that this type of social organization, reducing man to the element of the machine governed by its rhythm and requirements transforms them into homo consumens². Industrial production is not a response to spontaneous human needs³ - the system creates "artificial, false, non-developmental needs, which include the desire to have a huge number of items". Consumption - whether in the sense of physical consumption or whether it depends on appropriation - is the ultimate expression of human striving to control and dominate over reality.

"I am what I consume" has become an existential motto and in this formula Fromm⁴ sees the drama of contemporary culture. The more that being, which is an autonomous and essential value for this author, will be equated with possession, the more man will be alienated, enslaved by fetishism-what he has will be more important from how he lives, how he "is". The "to have" modus makes the man addicted to things in an absolute way-"the thing holds me, because my sense of identity, my normal mental state is based on my own things" (Fromm 1991).

Modern reality dominated by constant rush, aggressive media, large corporations, the market and thus ubiquitous advertising causes that every person is a consumer. Consumer, consumption - these terms are for most of us connoted as negative, they call to mind a passive, not very clever, deprived of their own opinions human mass, for which the greatest priority is to seek pleasure and banal entertainment. One of the first sociologists to consider the phenomenon of consumption was T. Veblen. In his work "The theory of the leisure class", he included a theory of ostentatious consumption that was very important from a sociological point of view. He stated that the motive for consuming various goods is not the need to survive, but the desire to create the possibility of creating glaring differences between people. Owning these goods means that their owners achieve a higher status. These consumption patterns created by higher classes are then taken over on the principle of imitation by middle classes to eventually penetrate the social lowlands. During this process, these patterns lose their magic, unavailability, and become more and more ordinary and less attractive. This implies the necessity of creating new consumption patterns by the "leisure class"(Veblen T., 1971)⁵.

Currently, representatives of the upper class, political and economic elites are also looking for goods and forms of consumption that would manifest their position and would not be available to the lower ranked in the hierarchy⁶.

² ie. a total consumer whose only goal is to have more and more and to use more and more.

³ ie. Our civilization began at the moment when the human race began to actively take control of nature [...]. Along with industrial progress [...] we found ourselves on the road leading to unlimited production and, consequently, unlimited consumption.

⁴ Fromm: "capitalist society produces a lot of useless things and to the same extent many useless people." (Fromm 1991).

⁵ ie. located at the top of the social ladder, in order to clearly distinguish itself from the representatives of the lower classes.

⁶ So rich people build bigger houses, buy better cars, spend holidays in more exotic places, etc. The rich have to earn and work more to satisfy their needs of showing material advantage over others and the poorer must have more money to try to equal the

Based on the above, the aim of the paper was defined as the analysis of consumer behavior in the context of sustainable development. The article defines the concept of sustainable development and consumer behavior, by using the study of the subject literature about sustainable development and the analysis of source materials. The research method used is the study of the subject literature and the analysis of source materials. The theoretical considerations were supported by the results of secondary research showing consumer behavior and attitudes towards environmentally friendly products.

SUSTAINABLE CONSUMPTION AND CONSUMPTION BEHAVIOUR

At present, people have such goods that our ancestors could only dream of and yet they want to acquire even more. They buy not only goods necessary for life, but also those that they do not need at all. Consumers are convinced of the necessity of what they buy and it is hard for them to imagine that they could live without all these things. Research conducted in 1994 on a group of over 1,800 consumers by J. B. Schor confirmed that regardless of the individual's wealth, they will always want to earn more while striving to achieve maximum utility derived from the consumption of purchased goods. Respondents asked every 2-3 years a question about the level of their disposable income and the products they need to be able to fully meet their needs not only achieved higher disposable income in real terms than before, but also stressed that they would like to earn much more. In addition, all the time they felt a bit unsatisfied and expressed their desire to earn even more enabling them to fully satisfy their desires.

Currently, budget constraints are no longer an obstacle to continual consumption. The consumer can easily bypass them by, eg. consumption "on credit", which creates the illusion of unlimited consumer possibilities. The consumer can apply for a loan not only in financial institutions and in loan companies, or through installment sales. Excessive and unsustainable consumption, is the result of rapid economic growth. Among the problems arising from the excessive purchase of things the following ones can be mentioned:

Sylogomania - compulsive accumulation of things, often useless and worthless, which results from the fear of losing them. This is a problem related to excessive consumption combined with a phenomenon called collection team. In the longer term, this disease causes disorganization of social and professional life.

Ephemerization - pursuit of what is new. The consumer feels the desire to have a newer good because of the fear of losing something important. The consumer is constantly accompanied by a sense of loss. It is associated with a continuous desire to have (*Czy to jeszcze zakupy, czy to już rozrywka*. Retrieved February 19, 2014, from <http://www.bankier.pl>).

In both cases, consumers' houses are transformed into warehouses. Such unrestrained consumption leads to both environmental degradation through excessive exploitation of natural resources, and to the waste of goods and human labor and creates significant economic disparities between people. Excessive consumption is also a huge source of waste generation. The average Pole produces 250-300 kg of garbage in a year, Americans 864 kg per person, the Japanese – 1000 kg. According to UN data, around 50 million tons of electro-waste are recycled annually in the world. In Poland, every year, 40,000 tons of equipment such as: TV sets, radios and players are trashed. It constitutes a decimal part of all Polish electro-waste. In the US this figure in 2012 amounted to 3.4 million tonnes. It is reasonable, then, to introduce the idea of sustainable consumption, which is an inseparable element of the idea of sustainable development⁷.

richer. As H. Mamzer writes: "the motive for consumption is not the need to survive, but the need to mark social differences between members of different classes." So we all, wind up this huge machine called consumerism.

⁷ It is adopted by the world community as a basic paradigm of behavior at the turn of the 20th and 21st centuries and combines economic development, environmental protection and social justice on

According to Golka: "consumption is not so much about meeting the necessary needs, but satisfying desires or whims, characterized by greed in buying things and using services that are not necessary for survival⁸. It is a spectacular action for show and it serves the fight for prestige, and ultimately, the fight for the economic success of the individual"(Golka, 1993). He defines consumption as a quasi-religion because it has become a way of life and is often a goal to which one stubbornly aspires and because modern shopping centers, casinos, theme parks are considered "temples of consumption" because of their magical, sometimes even sacral character where people go to practice their "consumer religion". It is a source of pleasure and contentment, and the inability to cultivate it becomes a source of suffering. Both the poor and the rich participate in this striving to achieve material satisfaction of their needs. Living with a sense of self-independence in times of dominance of the market economy calculated for profit and efficiency is not easy. Especially when all teams of advertising and marketing specialists, try to influence our decisions regarding the choice of goods through a series of various tricks. Advertisements that are currently everywhere play a huge role in this process⁹. Advertisements¹⁰ usually do not refer to rational arguments, to our reason, but rather play on our feelings and emotions. What is more important is the context, as well as the recently fashionable reference to the often drawn out of thin air, quasi-scientific results informing us of the enormous benefits of using it. A. During says: "Creating needs is a huge global enterprise." Advertising has been one of the fastest growing sectors of the economy in the last four decades. In the U. S., spending on this goal has increased from US\$198 per person in 1950 to US\$495 in 1990. Global advertising spending increased from c. US\$39 billion in 1950 to US\$247 billion in 1988 and is growing faster than the efficiency of the economy".

According to U. Paco, modern commerce is based on three elements: the design of the premises, merchandising¹¹ and operation. These elements are closely related. Skilful control of all these elements determines the final commercial success. Going to shopping malls and other objects of collective consumption, we do not even realize that we are the object of huge manipulation mainly from the merchandising specialists. They need to make shopping pleasant and associated rather with fun than everyday necessity. In order to achieve this, they must first "take into account the determinants of the anatomical structure of a human being. Differences in behavior resulting from gender and age must also be taken into account because otherwise their offer will be directed to a sexless, age-deprived human being who does not exist in the real world." For example, visiting museums, sports facilities, etc. we enter and leave often through a store with numerous souvenirs. Goods are often sold in multipacks therefore people buy more than they intended. A lot of goods are displayed next to each other, suggesting to the client their complementarity, eg. ties are sold next to suits. Often the goods are displayed in such a way that the customer can touch and test it, which has a positive effect on sales efficiency. The interior and atmosphere are also to encourage a customer to buy, so as a rule, the first department we get in the supermarket is often a florist or a department

a local, regional and global scale, while opposing the pursuit of continuous economic growth, regardless of the social and environmental costs.

⁸ Similarly, according to H. Mamzer, consumption culture imposes on the individual the necessity of buying and using objects and ideas that are often unnecessary in the context of satisfying life's needs.

⁹ They inform us about price reductions, larger packages of products at the same price, opportunities to win valuable prizes and many other benefits resulting from the purchase of this and not another product.

¹⁰ According to Ritzer, modern advertising, designed to "help" people in deciding, was the first step on the road from the production to the consumer society.

¹¹ As Paco writes: "until now, merchandising has been a poor relative of marketing. Marketing specialists have decided how the product will be presented to the world, and less important details regarding translating it to the store level have been left to merchandising specialists - marking inside the store, the layout of the exhibition. These relations changed when it was realized that more than half of shopping in the store is unplanned.

with bread. The point is to stimulate the consumer's senses, weaken his firmness and create a positive image of the store.

The need to buy more and more new products and the desire to experience ever newer, exciting experiences caused that consumerism has become a permanent and indispensable part of our lives. Ritzer in his book "Macdonaldisation of social life" went to compare different areas of modern social life and the principles of market operation with the operation of McDonald's fast food restaurants¹². These most striking features of macdonaldisation are:

- efficiency as seeking the most optimal solutions and the best possible means,
- calculating - emphasizes the quantitative characteristics of goods and services,
- predictability and the possibility of manipulation.

All these features have major impact on our consumer behavior.

Calculation, on the other hand, means that the quantity offered is more and more influencing our purchasing decisions, in place of quality. Shopping centers and fast food outlets lure us by various types of price reductions, promotions in the form of offering more products at the same price¹³. Predictability, is to make the customer entering for example, the market or McDonald's know what may happen to them, what they can order or buy there¹⁴.

SUSTAINABLE CONSUMPTION AND DEVELOPMENT

Sustainable consumption means such consumption that contributes to the quality of life of present and future generations. The increase in the quality of life is affected not only by the level of consumption, but also: health, safety, education, work and social status, the state of the natural environment and social justice. Therefore, it is important to introduce a model of sustainable consumption. This model assumes consumption of products and services in such a way as to minimize the consumption of natural resources, especially non-renewable ones, as well as limit the amount of waste generated during consumption.

Continuous and sustainable consumption is balanced in the following aspects (Kielczewski, 2008, pp. 57-58):

- economic (establishing such proportions between current and future consumption, which do not contribute to economic imbalances),
- ecological (maximizing the usability of consumption while maintaining the usability and quality of natural resources and the natural environment),
- social (relatively equal distribution of consumption, i.e. accessibility for people regardless of time and space, and preference for forms of consumption that do not cause social problems),
- psychological (consumption contributing to the increase of the quality of life),
- demographic (demographic conditions do not constitute a permanent barrier to consumption growth),

¹² Using the example: if we want to make purchases, withdraw money or eat, most often we want to be served quickly and efficiently. Therefore, we go to the supermarket for shopping, to McDonald's for food and we withdraw the money from the ATM to save the most valuable thing - time.

¹³ This tendency can be seen even in the use of the names: eg. multipack, XXL fries. All this leads to the feeling that quality is the same as a large amount of things.

¹⁴ Markets, fast food bars or company stores, especially those belonging to the chain, are characterized by almost identical interior design and proposed assortment regardless of the country. This makes the client eating chicken at KFC in London feel the same way as at KFC in Hamburg.

- spatial (ways of satisfying needs do not violate the rules of spatial order),
- intertemporal (the above assumptions are possible to realize in an unlimited time perspective).

In order to achieve a continuous and sustainable development and improve the quality of life of all people, states should limit or eliminate production or consumption patterns that distort this development and should promote appropriate demographic policy (Gajdzik, Wyciślik 2010, p. 25).

Consumption trends convergent with the idea of sustainable and continuous development:

- eco-consumption - consumption oriented towards environmental protection. The production of organic food takes place in a way that does not impact ecological balance, with the employment of natural methods, without the use of artificial fertilizers, synthetic plant protection agents, antibiotics or GMO. This method of production ensures the purity of groundwater, protects the soil from pollution and reduces the leaching of nutrients. The main purpose of organic farming is the production of high quality food, while caring for the environment.
- consumer ethnocentrism (preferring national and local products) – it is important to rationally select imported products and not completely stop trade between countries. Ethnocentric consumption encourages both the selection of regional products and the consumption of products according to their seasonal nature, thus supporting the natural environment and local food producers [Słaby 2006, pp. 16-17].

Education of the society, leading to a change in the perception of the quality of life exclusively through the prism of consumption seems necessary, as well as the awareness that constant satisfaction of material needs only provides an apparent sense of happiness and life satisfaction. When making decisions about the purchase of a specific product, the consumer influences the demand for this product, which in the long run translates into the volume of supply¹⁵. Consumer responsibility, however, does not have to be limited to adequate consumer decisions. A manifestation of such responsibility may also be expressed in the form of active participation in discussions on the activities of various companies, or using official communication channels to influence the policies of these companies (Lewicka-Strzałecka, 2006, pp. 158-159).

The practical implementation of the concept of sustainable consumption has also become the basic objective of the European Union's activities in the field of environmental protection and consumer policy aimed at striving to raise consumer awareness and strengthening their rights in accessing product and producer information and ensuring security offered products.

CONCLUSIONS

The sustainable development is a development in which the needs of the present generation can be met without undermining the prospects of future generations to satisfy them. Based on the above analysis, it was found that:

- Consumer responsibility can shape not only the behavior of entrepreneurs, but also the product market.
- One of the basic factors motivating consumers to pro-ecological activities is the level of their ecological awareness. As it may be concluded from the presented research results, the

¹⁵ The increase in demand may lead to an increase in supply, and the limitation or complete abandonment of the purchase of a specific product may lead to a reduction in production or complete liquidation of the production line. The consumer, bearing in mind consumer responsibility, may try to limit the amount of purchased products produced by companies whose actions he/she does not accept, for the benefit of companies whose activities are perceived as ethical.

state of ecological awareness of society increases, which is visible in consumer purchasing preferences.

- A high level of ecological awareness of the society contributes to reducing the negative impact on the environment resulting from excessive consumption.

The next step of the research about consumer behaviour in the aspect of sustainable development will be empirical research.

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Crowdfunding as a form of financing innovative projects

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ABSTRACT

This paper briefly discusses the meaning of innovation in modern economy and analyses the phenomenon of social financing of business enterprises in the form of crowdfunding. The main aim of the article is to answer the question what de facto crowdfunding is and what its main features are. It is assumed that this form is suitable for financing innovative projects, particularly for high-risk startups. At the same time, the very form is regarded as innovative comparing to traditional business models and forms of raising the development capital. The article elaborates on how the idea of crowdfunding has been developing and discusses some of the attempts to regulate it in different countries, including Poland. The current legal conditions that underlie the development of social financing in Poland are discussed as well. The review of the most popular crowdfunding models is concluded with a description of their key features, similarities and differences. There are three types of models that are analyzed with reference to the protection of a donor's and a recipient's interests, i.e. a donation-based, a loan-based and an investment-based model.

Keywords: Crowdfunding, social financing, models of financing, law regulations, Poland

INTRODUCTION

In economics, there has not been a consensus on the concept of innovation (Górka, 2015, p. 32). Currently, it is broadly defined not only in terms of economics, technology or law but also viewed as a social phenomenon, „which is related to the creation of an innovation-oriented culture, entrepreneurship and social acceptance” (Oniszczyk-Jastrzębek, 2010, p. 39). In this respect the nature of innovation is undoubtedly multidisciplinary. Each economic entity has a specific innovation capacity which influences its development activities (Matusiak, Guliński (eds.), p. 11). It also demonstrates its own particular innovative behavior's (ranging from simple to radical solutions), which influence both the position of a company and its role in a global economy. From this perspective, innovation is approached as a web-based process which is founded on already existing or new networks of links that set up a system of innovative economy. In this kind of system not only does an innovative entrepreneur demonstrates innovative mindset within his own organization, but also plays a role of a recipient of innovation-oriented „external” solutions that provide support during the phases of implementing and capitalizing on new solutions. The overall level of innovation is clearly influenced by external environmental factors that, among others, include: shortening products life cycle, strong competition, less distinctive boundaries of industries, digitalization leading to new business forms, as well as globalization (Oniszczyk-Jastrzębek, 2010, p. 39). Innovations could either refer to fundamental changes in how a business operate or to small changes that will gradually improve its performance (Buszko, p. 9); they could also refer to a new organization of economic processes, particular business models (that are unknown or that have not yet been applied), as well as to sources of business financing.

The innovations in the market economy environment are turning into an indispensable „tool” that is used to get competitive advantage. Nevertheless, they involve the necessity to meet projected

expenditures, mostly financial ones¹. Therefore, there are a few issues that have considerable importance when financing an innovative business activity in a given country – its tax and financial policy; its rules for granting loans, credits, grants; the ways it supports and develops the knowledge transfer to its economy (both at national and regional level). From the financial aspect and especially in the context of so-called startups, it seems that apart from more traditional sources of financing innovative activity (commercial or public ones), so-called alternative financial instruments raise in importance, including crowdfunding (particularly the investment model). Crowdfunding, being a social phenomenon based on the idea of collective action and social participation, did not develop into a purely economic tool but emerged from a real need that had arisen from having insufficient funds to organize cultural initiatives (*pro publico bono*). The advantages of crowdfunding, that are associated with a relatively easy access to financing, have also been acknowledged by business communities, especially by small and medium-sized enterprises (SMEs). Next to low costs of getting financing, crowdfunding allows to build up savings owing to the methods it uses to raise funds (the use of software and on-line tools, transactional platforms) and which are related e.g. to market research, surveying customers’ expectations of a product, product promotion or brand building. It is also “safe” for business owners (inventors) allowing them to retain control over the company.

METHODOLOGY, RESEARCH OBJECTIVE AND QUESTIONS

The subject of this paper is crowdfunding understood as a form of social funding of innovative development projects, which has been acquiring wider significance in the modern market economy. The phenomenon will be discussed from the perspective of its origin and development, its types and variants, its models, as well as from the point of legal and economic backgrounds that exist in different countries. The main aim of the article is to answer the question what *de facto* crowdfunding is and what its main features are. It is also crucial to look into the Polish legal framework concerning the use of social funding (including potential barriers) and to compare it with solutions adopted in other countries. The analysis also includes an investigation into the attitude that has been taken by the EU legislator, which deals with the issue of recognizing the need of introducing transnational regulations regarding crowdfunding.

The analysis rests on a foundation that crowdfunding is suitable for financing innovative projects, particularly for high-risk startups. It is also considered proper in situations when traditional sources of financing are excluded, e.g. because of transaction risk or an innovator’s poor credit history. It has been noticed that Poland belongs to the group of European countries where a banking credit system is regarded as the major source of capital. Due to the fact that SMEs are unable to obtain credit (or the costs are too high) there is a tendency among the entrepreneurs to finance their activity from internal sources (i.e. their own). Although it is becoming more common to come across commercial undertakings financed with the help of so-called business angels or venture capital, Polish standards are still falling short of the standards of highly developed countries. The changes that have been taking place in global economy – like the introduction of the Web 2.0 software, cheaper and easier access to the Internet or providing online payment services – allow business models to expand on a greater scale (e-business, e-commerce) and those models require modern forms of financing. Therefore, the main research questions are whether and why social financing (regarded as innovative in the context of more traditional sources of development capital) is suitable for financing innovation. The answer to the above questions was constructed based on literature research and comparative analyzes. The practical dimension of the operation of crowdfunding models, in particular in Poland, was also assessed by searching the dedicated websites and crowdfunding platforms.

¹ The influence of innovation on competitive advantage is described in depth by A. Buszko, especially from management point of view

The important area of the analysis is the process of the differentiation of crowdfunding forms, which depends on particular goals and conditions. In consequence there are many patterns of this undertaking to be found. In order to regulate those patterns by law they firstly need to be classified in the form of models. Furthermore, the analysis concerns the peculiarity of social financing in comparison with other alternative methods of obtaining development capital. Subsequently, the analysis includes the situation in the EU countries and the activity of the European Commission (the EC) in the field of evaluating this form of financing from the viewpoint of the binding division of competences. One of the important criterion in appraising the EC's activity is regarding the domestic regulations as sufficient, when one takes into account the presence of the phenomenon in the EU. The European legislator ultimately holds an opinion that crowdfunding still focuses on a few European local markets, so an European legislative initiative is not yet needed. Great Britain is considered to be the European leader in encouraging the development of this financing method, followed by France, Finland, Germany and Italy. The analysis of the situation in Poland includes also some remarks with respect to current regulations and with regard to the development level of social financing. It embraces legislation, prerequisites and justifications underlying these regulations, as there is a need to protect the interests of all the parties engaged in those kind of undertakings.

THE ORIGIN OF CROWDFUNDING AND BASIC FINANCIAL MODELS

The concept of “crowdfunding” has its origin in North America. The term is attributed to M. Sullivan who published it on his blog fundavlog back in 2006 (Dziuba, 2012, p. 84). The first example of this kind of initiative can be traced back to a collection called *Please support Marillion, donate \$5 to our account* (Kozioł-Nadolna, 2015, p. 674). At that time (i.e. in 1997, when the phenomenon of crowdfunding had not yet been defined) the fans of Marillion managed to finance the entire tour of their favourite band by means of an online fundraiser. In the years to follow, many platforms and social networks were being created in the US. At first they promoted initiatives dedicated to musicians and artists (e.g. ArtistShare, Sellaband.com) but soon they turned to further areas, which included cultural, sporting, social (charity as wells) and business activities (e.g. Kickstarter, IndieGoGo). There has been also a noticeable development of crowdfunding portals both in Western Europe and in Poland.

Both domestic and foreign subject literature points to the unique character of crowdfunding, which involves different ways and means of communication used by the entity searching for capital (the recipient) and the entity who serves as a potential source of capital. There is no traditionally defined financial intermediary. To some extent, this role is fulfilled by platforms or crowdfunding portals. What is more, the overall support received by a given entity (or project) is built not upon a basic transaction (e.g. a loan, a credit or a donation), that embraces the necessary capital (the whole of it or its substantial part); the support consists in many transactions that often rely upon relatively small financial resources. Hence no matter the case, in order to succeed in social financing it is vital to propagate a given project and to convince as many web surfers as possible. “The strength of this type of financing lies in community, whose engagement could translate into implementation of a given project” (Pieniżek, p. 6).

Without a doubt, the term “crowdfunding” is collectively used to designate a broad scope of online initiatives that are directed at indeterminate virtual community members. What also seems to be important is a service that the donors are offered in return of their financial support. It is this aspect that could serve as a criterion to identify three basic crowdfunding models and which is the case in subject literature as well (Rak-Młynarska, 2017, p. 95; Gostkowska-Drzewicka, 2016, p. 60). Firstly, there is a **traditional donor model** in which the participants do not receive any remuneration and their motivation is not based on profit; in this case the participants are not rewarded². However, in a

² Platforms that can serve as an example of a model not based on a reward is JustGiving.com, which uses to carry out social projects that address the peoples of disability, local communities, education, sports, as well as the well-being of animals. In Poland a similar initiative could be found at siempomaga.pl.

modified model (the so-called reward-based model) the donors would expect some small gratifications or gifts, that are offered after the campaign succeeds³. That donor model seems to be the most widespread form (Koziol-Nadolna, p. 673, Dziuba, p. 86). Secondly, there is a **loan-based model** that allows to raise financial resources under specific requirements, without the participation of institutionalized financial entities (in the form of micro-loans as well as social loans). Thirdly, there is an **investment model** that provides an exchange of financial resources for company shares, securities or a share in the projected profits⁴. Sometimes a **mixed model** can also be identified, which is a product of the three major models (Dziuba, 2012, p. 86). Recently two models have been gaining influential position as alternative financial instruments used by business practitioners and aspiring entrepreneurs to accumulate capital. These are especially the investment model (including the equity model, also referred to as “equity crowdfunding”) and a model based on a collective investment scheme (e.g. within an investment fund). It is noticeable that some of the models (e.g. the traditional and the loan-based one) dominate over those in more initial and developmental stage (the investment and the equity model).

It is indicated in the literature (Klimontowicz, Harasim, 2015, p. 228-229) that crowdfunding, understood as an alternative form of financing, is characterized by:

1. methods used during the transactions and a setting they occur in, i.e. different types of transactional platforms,
2. simple and transparent procedures for carrying out transactions,
3. lack of regulatory constraints that are typical for the financial sector, particularly the banking sector, as well as
4. lack of protection for the participants of purchase/sale transaction.

It seems that the abovementioned features are mostly reflected in the donor and loan-based models. It is reasonable to assume that is the reason behind their “popularity”. The issues that are related to regulatory constraints (concerning, among others, the introduction of legislation on the protection of investors) are sometimes perceived as barriers to the development of the investment model.

At times, while discussing the instruments of social financing similar to crowdfunding the concept of fundraising is brought up. This method of raising funds has been generally associated with charity and public benefit organizations. It is defined as “a collection for non-profit purposes (...). In this model it is important to establish a relationship with a donor or a sponsor who could support an important idea of social (public) nature.” (Pieniązek, p.10). Hence, the feature that makes fundraising resemble to crowdfunding is getting funds from a particular community. Although fundraising is traditionally associated with offline activities, it does not exclude the use of fundraising portals, given the fact that they allow to get donations much faster and much cheaper. (Pieniązek, p.11). In terms of goals, the non-profit fundraising shows a close resemblance to crowdfunding represented by the donor model.

Sometimes it is observed, particularly in the foreign literature, that there are noticeable similarities between crowdfunding and so-called **bootstrapping**, i.e. a financing technique which strives for the lowest use of resources. In both of the cases an entrepreneur is forced to take advantage of all the accessible financing opportunities, displaying a high level of creativity during the searching process (Sannajust et al., 2014, p.1922).

CHALLENGES FACED BY SOCIAL FINANCING

The existing literature cast light on those factors that could significantly influence how often the model of crowdfunding is put into practice (Sannajust et al., 2014, p. 1922 -1925). Some of them are:

³ Some of the platforms of this type are: Kickstarter.com, IndieGogo.com., PolakPotraf.pl or wspieramto.pl.

⁴ For example: Within the investment model Dziuba distinguishes the collective investment model, the investment fund and the securities model. See: Dziuba, 2012, p. 86

1) **lack of pre-existing resources** on the part of an entrepreneur, as well additional circumstances that may influence the evaluation of his assets, including personal traits (e.g. a specialized knowledge in the field of management, professional experience in running a business);

2) **risk of moral hazard and information asymmetry** – because of the nature of crowdfunding (particularly due to the nature of the investment model) the risk of failure is taken by more people, as the financing structure implies. For this reason, the risk taken personally by an entrepreneur (or an inventor) is much lower than if the undertaking were funded solely by his own capital. According to the theory of moral hazard it is possible that being exposed to lower risk may influence entrepreneurs’ behaviour, the decision-making strategies and ultimately the riskiness of the investment itself. On the other hand, information asymmetry takes places when parties to an agreement (or transaction) have access to different levels of information. The asymmetry could occur in each of the crowdfunding models; it seems, however, that equity model involves the highest risk.

3) choice of a **legal form** (either not-for-profit or for-profit organizations) suitable for business activity that is being financed, which provides motivation for succeeding (especially in the equity financing), may contribute to conflicts of interest stemming from management strategy, as well as imposes the rules for supervision and control; and finally

4) ultimate goal of financing, as well as the **legal issues** that are associated with the number threshold of potential investors (or shareholders) and the issuance of shares (or stocks). These issues are especially important in the case of equity crowdfunding owing to a possible collision with legal requirements concerning the issuance of securities by private companies, therefore outside the regulated market and with possible sanctions in the background.

It cannot be underestimated that crowdfunding is also a challenge for states, which play the role of a subject that regulates the environment of business activity. The issue could turn out to be vital in the context of providing legal protection both to the investors that has decided to take part in unregulated transactions (as opposed to the players on the traditional financial markets) and to the borrowers and lenders, who are not subjected to consumer-oriented regulations. In this regard, it can be observed that there are many approaches towards crowdfunding, especially when it comes to the loan-based and the investment models. There are countries that are trying to implement regulations that will treat this phenomenon on equal footing with traditional financial markets or consumer credits. Some of the countries are trying to apply the ideas that would be dedicated to alternative “internet” financial instruments, while others leave the issue outside the area of their interest (Klimontowicz, Harasim, 2015, p. 232). Among others, the examples of the countries that have diagnosed the need for fresh legislation are: the United States, New Zealand, Canada; in Europe these are: Italy, the United Kingdom, Austria, Finland and Portugal.

As for the regulatory actions that have been carried out in the US, which is regarded as a leader in the field of alternative entrepreneurship financing, it is worth paying attention to a document that was signed on April, 2012, by Barack Obama, namely the JOBS Act (The Jumpstart Our Business Startups Act, with effect from May 16, 2016). On the one hand, the regulation resulted from a growing need to protect “non-accredited” investors (i.e. those who primarily do not professionally participate in trading and lack a relevant experience), on the other, it stemmed from a necessity to ensure safe trading in the name of public interest. The regulations that are especially significant to the equity crowdfunding and financing startups are described in Title II and III of the JOBS Act. It is because the document has introduced a new “registration” exception within the already existing regulatory regime which concerns the issuance of securities (or shares). Its primary goal is, above all, to speed up and to facilitate the process of conducting public offering for startups that have decided to use crowdfunding, as well as to make startups’ financing market available to a wider group of investors (so-called non-accredited investors).

It seems that the EU legislator has been also noticing an increasing popularity of the discussed form of raising external capital by businesses (comparing to other potential sources). To answer the question

of how the potential of crowdfunding could be exploited in the EU and whether it is necessary to regulate it at Union level the European Commission (the EC) hold public consultation in 2013, between October 2 and December 31. The document that initiated the consulting process stressed the role of crowdfunding as an alternative to traditional business financing (which goes beyond social initiatives) and as a platform that directly connects the donor (a lender or an investor) with the one that needs financing to launch a particular project. The phenomenon of crowdfunding, as the EC has noted, is mainly based on the possibility of using the Internet in the discussed “financial relation” (Consultation, 2013).

The conclusions that had been drawn from the EC’s consultations were presented in March, 2014. Among others, they pointed out at the difference between the investment and the donation-based crowdfunding. The latter also proved to be the most frequently used and the most known form of social financing. A rewards-based, a pre-sale, as well as a profit-sharing crowdfunding are also well-recognized. Considering the position of “the founder” of a project (or an enterprise) the EC came to conclusion that the donor and the investment models should be treated as key crowdfunding models.

CROWDFUNDING IN POLISH ENVIRONMENT

The market of social financing in Poland is relatively small and remains in development phase, comparing to Europe and the rest of the world. Although first loan-based models date back to 2008 (both the first Polish portal of this type and the biggest one is *Kokos.pl*) the very idea of social financing grew in popularity only a few years ago. In accordance to a general development trend in crowdfunding there are platforms dedicated to the donation, the loan-based and the investment models. The development of crowdfunding in Poland has been reflecting general trends, thus the highest activity has been stimulated by the donor, loan-based or mixed models, which is accompanied by a slow development of the investment model.

There is a wide variety of initiatives that could be potentially financed: musical or, in general, cultural initiatives (*Megatotal.pl*, *wspieramkulturę.pl*), sporting activities (*stworzymistrza.pl*), scientific endeavors (*scienceship.pl*), charitable collections (*siepomaga.pl*, *zrzutka.pl*, *pomagam.pl*), loan-based (*kokos.pl*, *finansowo.pl*) or investment-based undertakings (*crowdangels.pl*, *beesfund.pl*). It is hard to notice any platforms destined for financing real estate investments relying on the last model (Gostkowska-Drzewicka, 2016, p. 69) and as yet there has been only one online platform that engages in this type of activity (*sharevestors.com*). In turn, the platforms based both on the donor and the mixed model seem to buzz activity (*polakpotrafi.pl*, *wspieramto.pl*). As in the case with other countries the role played by the Polish platforms is particular. They create the space for interaction between entities looking for financing and people who are inclined to provide such financing. By fulfilling intermediary functions, these portals are responsible for verifying and presenting offers, as well as for a substantive and technical support in the course of campaigns. They charge from 5% to 10% of the raised capital for their services; additional costs include a handling fee imposed by the operator of the payment system (2,5%). There is also a variety of forms of financing – some of the platforms operate on a “all-or-nothing” basis, others employ so-called flexible funding (“take as much as you can handle”). There are also platforms that propose intermediate solutions (e.g. by setting a percentage threshold that allows to close a project). Poland belongs to the group of those European countries which lack comprehensive legal regulations that would directly address the essence of crowdfunding (which locally is referred to as “social financing”). Although the parliament passed a bill on organizing public collections in 2014(33) (which had been originally planned to introduce solutions applicable to this form of raising funds collectively), ultimately, the regulation did not affect the issue of crowdfunding whatsoever. The claim that the new law should cover crowdfunding was also seriously challenged by crowdfunding communities. The fact is that the legislation “loosened” the legal regimes concerning public collection of that period; nonetheless, the law is in force only if the offerings (or donations) are in cash or kind, they are collected in public space and the aim of the collection is in line with current law. Therefore, all of the online initiatives that take place in the “digital space” are outside the scope of the legislation. However, it should be stressed that the absence

of regulations for this type of financing does not equal a lack of interest on the side of the state. Above all, owing to the diversity of crowdfunding models different events may be given different legal classifications, which is important when one bears in mind prospective tax liabilities.

The legal relationships used within crowdfunding are generally based on typical agreements defined in the Civil Code, as well agreements that are modified and adjusted for the purpose of a given crowdfunding model (Czarnecki, Wojdyło, p. 14). As for social loans, this type of activity has used to be qualified as a loan agreement, while the pre-payment or the reward-based models use sales agreements and the like. In case of entity crowdfunding the difficult issue is what type of organizational-legal form should be chosen for a given enterprise. The list of potential types comprises a limited joint-stock partnership, a joint-stock company, as well as a limited liability company. On the other hand, it has been pointed out that establishing a limited company is the least risky in terms of law due to the current Polish regulations on capital markets.

CONCLUSIONS

The analysis of the notions of innovation and innovativeness in the context of crowdfunding have brought to light their mutual dependence. While the foundation of innovation is knowledge, crowdfunding is more about knowledge-sharing. It is because this form of financing relies on „collective wisdom”, therefore, it is founded on an intensive exchange of information on a given project (or investment) or even on a collective effort to seek available solutions. Willing to co-finance a particular undertaking, the people who share their capital also feel responsible for its success. The more they engage in a project by becoming their proponents, the more they contribute to a newborn company’s brand and its value. Hence, crowdfunding (especially in the equity and the investment model) is not only an innovative financial tool (mainly due to its use of intermediary platforms or other online services) or a source of financing for innovative ideas or different types and forms of activity; it is also a ground-breaking mode of investing one’s resources. Although the “survival rate” of startups is usually low, they can guarantee a high interest rate in case of market success.

If all the other “alternative” forms used to finance risky projects fail (business angels, VC or strategic investors) social financing, may be the only solution that is available to an aspiring entrepreneur. The lack of accessible and cheap capital is resulting both inhibition a startup of a company and stifles innovation during further phases of its development. Not only does that force a shift in attitudes towards business models but also develops new approaches towards social financing itself. The phenomenon of crowdfunding with its potential has not been yet fully investigated. Nonetheless, the current research and practice demonstrate that there is a growing interest in how it could be applied.

The donation-based model (which draws on relatively small payments from “the crowd”) could prevent donors from considerable losses thanks to the scale effect (meaning the more people engage in a project, the less payments are required to reach a goal). Whereas the investment and the equity models pose a much higher risk because of the capital that has been involved and the investors who have not gained professional experience. With this perspective in mind, it seems legitimate to introduce legal solutions that would include safety measures protecting both the investors and public trading. Even so, one has to bear in mind that if regulations become too strict the changes could backfire and, thereby, could make it harder for the discussed phenomenon to grow or even may absolutely prevent it from developing. Although crowdfunding remains within the range of the EU legislator’s interests, it seems to occupy a secondary role in the context of the current challenges that the EC has mounted for the entities in the financial and banking sector. However, it is not impossible that this approach will change in future, taking into account a potential future demand for this type of financing in terms of transnational cooperation.

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Resilient and Expansive Economies of the European Union in the Context of the Energy Policy

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ABSTRACT

The European Union's goals of energy policy have been allocated to particular economies according to their economic, political, and institutional conditions. The national strategies of the member states are heading towards these goals. The research presented in this paper compares the effectiveness of the national energy policies with the ecological footprint of the member state economies. The advances measured by the key indicators of energy policy 2020 have been compiled for comparison with the biocapacity of the economies. It is aimed at showing the sustainability of the economies and the effectiveness of these strategies. The research identified four groups of countries distinguished by the criterion of their policy resiliency and sustainability. Resiliency is understood as an energy policy which balances energy flows in an economy without increasing ecological deficit. Sustainability defines countries with demand for energy within an ecological limit of an economy. The most expansive economies increased their ecological deficit, regardless of the advances in some areas of their national energy strategies. Nevertheless, the success of the European Union is mostly defined by the economies which are decreasing their ecological deficit compared to their levels in 1990. However, most of the economies are still on the way to sustainability.

Keywords: *energy consumption in the EU, ecological deficit, sustainability and resiliency, energy policy 2020.*

INTRODUCTION

The Energy Union Package presented in the Communication of the European Commission in 2015 offered a framework strategy for a resilient energy union (European Commission, 2015). The strategy follows the energy policy originally regulated by the Directive on the promotion of the use of energy from renewable sources (European Union, 2009a) and the strategy presented in the Communication of European Commission in 2010 (European Commission, 2010). The energy policy is strongly related to the climate policy: “Improving resource efficiency will ease the pressure on natural capital, while enhancing the resilience of the Union’s natural capital base will deliver benefits for human health and well-being. Action to mitigate and adapt to climate change will increase the resilience of the Union’s economy and society, while stimulating innovation and protecting the Union’s natural resources” (European Union, 2013, p. 178). The policy is related to the use of renewable energy sources, reduction of greenhouse gas emissions, and the increase of energy efficiency as it is showed in the European targets “20-20-20” for 2020; and it is the continuation of the energy policy intensively developed since the beginning of the 1990s (Conference in the Hague, 1991).

This paper seeks to present the effectiveness of the policy presented in the Energy Union Package in the member state economies of the European Union. The EU specified a lot of indicators for the monitoring of the advances, such as energy dependency, energy intensity, or shares of renewable energy in gross final consumption; for example, the European Environmental Agency specified 36 indicators for the monitoring of the above Directive from 2009 (European Environment Agency, n.d.).

However, the economic indicators should be related to the ecological indicators to show the resiliency and sustainability of the economy. The most elaborated indicator is ecological footprint, which measures the demand of an economy for ecological assets. This indicator is balanced with the biocapacity of an economy to evaluate its sustainability (Global Footprint Network, 2017; Mancini et al., 2016, 2017; Moore et al., 2012; Niccolucci et al., 2012; Wackernagel et al., 1999). The concept of ecological footprint is also widely criticised (Ayres, 2000; Fiala, 2008), although its idea yields robust and communicable understanding on at least “a minimum condition for ecological sustainability” (Wackernagel & Silverstein, 2000, p. 394). Therefore, it is often applied to compare different nations (Szigeti et al., 2017; Drastichová, 2016; Moran et al., 2008) and developed from the perspective of additional indicators and concepts (Sutton et al., 2012; Kratena, 2008).

Resilience assumes the adaptability in the evolutionary sense related to the different strategies and determinants specific to particular members. The arguments presented in this research do not aim to indicate a universal level of all indicators in individual countries. Such an option seems utopian due to different economic, demographic, or institutional conditions in particular countries. It also does not analyse the advances related to the particular goals allocated in the EU documents. However, it evaluates the effectiveness of the policy strategies in these countries in the terms of the ecological deficits of these economies.

An economy is sustainable when it balances its demand and supply of ecological services without generating an ecological deficit. In turn, a resilient economy, in the terms of the EU energy policy goals, is an economy which effectively balances its different energy flows without increasing ecological deficit. It reflects the effectiveness of its energy policy regardless of the present stage of sustainability of the economy in terms of its ecological deficit, although it is assumed due to the EU energy policy goals that the economy is heading towards sustainability.

The research can be used to both design energy policy goals at the EU level and revise national policies in particular countries according to their ecological situation. This research seeks to provide the holistic perspective postulated in the concept of sustainable development and the strategy frameworks for energy and environmental policies.

METHODOLOGY OF THE RESEARCH

The selected energy policy indicators in the European Union (EU) member economies presented in Table 1 have been compared with both the ecological footprint and the biocapacities of the economies. The concept of ecological footprint is based on the works presented by the Global Footprint Network (Global Footprint Network, 2017), which also provides statistical databases. It shows the demand for a country’s environmental assets. Ecological footprint is usually balanced with a country’s biocapacity, defined as the productivity of these assets; a demand surplus contributes to environmental hazards. Biocapacity also includes services related to the absorption of carbon emissions, which, together with other gases, contribute to climate change. The indicators are tracked in global hectares (gha), which are standardised hectares with world average productivity (Global Footprint Network, 2017). Biocapacity is relatively stable over time, and the indicator mostly changes (if calculated per capita) with the population changes in a country. Therefore, a rate of population growth higher than a rate of an energy consumption increase, mirrored in lower primary energy consumption per capita (PEC), will be identified by the increases in ecological deficit (ED). Note that a negative ED indicator denotes an ecological deficit ($ED < 0$), while a positive one indicates ecological surplus ($ED > 0$); and accordingly, if the indicator is decreasing over time, then the ecological surplus is also decreasing, but the ecological deficit is increasing.

Due to the data availability in the database of the Global Footprint Network, all estimations have been conducted for 2013 and compared to 1990. The energy intensity of the economy (EI) was referred to 1995 due to the available data in Eurostat. Population data for France were available for 1991. Additionally, ED and ecological footprint (EF) was calculated for 1993 for Slovakia and Czech Republic and for 1992 for Estonia, Lithuania, Latvia, Croatia, and Slovenia. The ED and EF for the EU28 represent the average values of all member states (excluding Malta in the calculations for 1990).

Table 1: Indicators of energy policy in the European Union and the ecological balance indices

| Indicators | References |
|--|--|
| PEC: Primary energy consumption per capita [tonnes of oil equivalent (TOE) per capita] | European Commission, 2014b, 2017; European Union, 2012; Eurostat, 2017 |
| GGE: Greenhouse gas emissions per capita (all sectors and indirect CO ₂ excluding land use, land-use change, forestry and memo items, including international aviation) [tonnes in CO ₂ equivalent per capita] | European Commission, 2014; European Union, 2009b; Eurostat, 2017 |
| EI: Energy intensity of the economy; i.e. gross inland consumption of energy divided by GDP [kg of oil equivalent (KGOE) per capita] | European Commission, 2014b; European Union, 2012; Eurostat, 2017 |
| SRE: Share of renewable energy in gross final energy consumption [%] | European Union, 2009a; Eurostat, 2017 |
| EF: Ecological footprint per capita [gha per capita] | Wackernagel et al., 1999; Wackernagel & Silverstein, 2000; Drastichová, 2016; Global Footprint Network, 2017 |
| ED: Ecological deficit per capita [gha per capita] | Wackernagel et al., 1999; Wackernagel & Silverstein, 2000; Drastichová, 2016; Global Footprint Network, 2017 |

According to the EU policy, all the member states are heading towards sustainability and they plan to substantially limit the impact of their economies on the environment. Therefore, the ecological deficit should eventually lessen, particularly in the economies with serious deficits. In turn, sustainability has been defined as ecological surplus, regardless of the changes in the balance between the energy demand and supply. Consequently, it assumes that an economy is sustainable even with decreasing ecological surplus; i.e. within the limits of its biocapacity. However, due to the low effectiveness of its energy policy, it is an extensive economy, and eventually the policy can lead to an unsustainable balance between its energy demand and supply.

The changes in balance between the demand for environmental assets and their supply has been defined as resiliency of the economy; i.e. the changes in ecological deficit. It has been assumed that a national energy policy has to be adjusted to the particular socioeconomic conditions so that it effectively balances the energy demand with supply, without increasing ED.

The indicators in Table 2 have been identified in the documents related to the energy policy 2020. Primary energy consumption and greenhouse gas emissions were additionally calculated per capita. All countries were originally divided into two groups according to ED as follows: unsustainable ($ED'_{13} < 0$) and sustainable ($ED'_{13} > 0$) economies. Next, within the groups, they were allocated into three groups due to the changes of ED as follows:

- 1) Resilient economies – their ecological deficits decreased in 2013 compared to 1990;
- 2) Expansive economies – unsustainable economies (i.e. with ecological deficits) in which their ecological deficits increased in 2013 compared to 1990;
- 3) Extensive economies – sustainable economies (i.e. with ecological surpluses) in which their surpluses decreased in 2013 compared to 1990.

Finally, the resilient unsustainable economies were split into two groups according to their level of energy consumption (PEC). The demarcation criterion was the average in the EU in 2013, calculated

for 3.1 TOE per capita (Table 2). It additionally illustrates the group of countries which are lessening the deficit with a relatively lower level of energy consumption.

RESULTS

The energy policy in the EU is effectively decreasing its ecological deficit compared to 1990. The deficit decreased by over 5% in 2013. Therefore, the economy can be seen as resilient, but still unsustainable (Table 2). Some economies have already reached the energy policy targets long before 2020; for example, Sweden met the SRE goal in 2011. The positive trend of the EU policy follows the effective policy of most of the member states (Figure 1).

| Ecological deficit/surplus | | | | | |
|--------------------------------------|--|----------------------------|------------------------------------|----------------------------|----------------------------|
| Unsustainable economies ED'13 < 0 | | | Sustainable economies ED'13 > 0 | | |
| Expansive ED'13 < ED'90 | | Resilient ED'13 > ED'90 | | Resilient ED'13 > ED'90 | Expansive ED'13 < ED'90 |
| | | PEC > 3.1 | PEC < 3.1 | | |
| Austria (AT) | | Belgium (BE) | Denmark (DK) | Estonia (EE) | Sweden (SE) |
| Luxembourg (LU) | | Netherlands (NL) | UK | Latvia (LV) | Finland (FI) |
| Slovakia (SK) | | Czech Rep. (CZ) | Ireland (IE) | Bulgaria (BG) | |
| Slovenia (SI) | | Germany (DE) | Italy (IT) | Romania (RO) | |
| Malta (MT) | | France (FR) | Cyprus (CY) | Lithuania (LT) | |
| | | Spain (ES) | | | |
| | | Poland (PL) | | | |
| | | Greece (GR) | | | |
| | | Hungary (HU) | | | |
| | | Portugal (PT) | | | |
| | | Croatia (HR) | | | |

Figure 1: Resilient and sustainable economies in the European Union in 2013 broken down by their energy policy effectiveness 2020.

Nevertheless, there are very expansive economies, such as Austria or Luxembourg, which increased their ecological deficits. The most outstanding example of an unsustainable economy is Luxembourg, with the highest energy consumption per capita calculated in 2013 for 8 TOE per capita and with a population increase by 50% in 1990-2013; additionally, the SRE is the lowest among member countries. The resilience in this small and highly urbanised economy can only be achieved with a radical policy focused on the reduction of energy input (consumption and efficiency) and a switch to renewable energy resources. Malta was included in the group based on the growing PEC and GGE, due to the lack of some data from 1990.

In turn, the leaders in the EU are Estonia and Latvia, which increased their ecological surpluses compared to 1990; additionally, they have relatively high RES. The EF and EI of the countries are relatively high, however, they stay within their biocapacity limits. Both countries also effectively reduced the energy consumption per capita. These changes were facilitated with the substantial decrease of their populations compared to 1990. Bulgaria and Romania, like the most of the post-socialist countries, dynamically increased the efficiency of their economies; additionally, their consumption substantially decreased compared to 1990. The processes were accompanied with the substantive decrease of their populations (by 15%).

The sustainably but extensive economies, such as Sweden or Finland, represent countries with an RES above the average in the EU. The Swedish economy consumes more than 50% of their energy from renewable resources. The decrease of ED was mostly facilitated by the population growth. In turn, Finland increased energy consumption and, together with its population growth, that led to higher EF in 2013.

Finally, the biggest group of resilient economies consists of 16 countries, which decreased their ecological deficit compared to 1990, although their demand for energy stayed unbalanced with supply in 2013. The countries with an energy consumption above the average of the EU, such as Belgium, Germany, or France, have to particularly decrease their levels of energy consumption. In turn, the group of countries with a consumption level below the average of the EU should continue the ecological modernisation of their economies.

Table 2: Panorama of energy breakdown by the key energy policy indicators 2020 compared with ecological footprint and deficit in the EU in 1990 and 2013

| Country | Population Change [%] 2013/1990 | PEC | | GGE | | EI | | SRE | | EF | | ED | |
|---------|---------------------------------|-----|-----|------|------|-----|-----|------|------|-----|-----|------|------|
| | | '90 | '13 | '90 | '13 | '90 | '13 | '90 | '13 | '90 | '13 | '90 | '13 |
| AT | 111 | 3.1 | 3.8 | 10.4 | 9.7 | 124 | 110 | 25.1 | 32.4 | 5.3 | 6.1 | -1.9 | -3.1 |
| BE | 112 | 4.6 | 4.4 | 15.0 | 11.1 | 200 | 152 | 1.3 | 7.5 | 6.9 | 6.9 | -5.9 | -5.8 |
| BG | 83 | 3.0 | 2.2 | 11.9 | 7.7 | - | 426 | 1.9 | 19.0 | 4.5 | 3.1 | -2.1 | 0.0 |
| HR | 89 | 1.8 | 1.9 | 6.6 | 5.7 | 263 | 197 | 21.9 | 28.0 | 1.9 | 3.8 | 1.9 | -1.0 |
| CY | 151 | 2.8 | 2.5 | 11.1 | 10.2 | 166 | 124 | 0.5 | 8.1 | 4.3 | 3.3 | -3.6 | -3.0 |

| | | | | | | | | | | | | | |
|-----------|-----|-----|-----|------|------|-----|-----|------|------|------|------|-------|-------|
| CZ | 101 | 4.7 | 3.9 | 19.2 | 12.5 | 399 | 276 | 2.9 | 13.8 | 5.6 | 5.3 | -3.1 | -2.8 |
| DK | 109 | 3.4 | 3.1 | 14.0 | 10.3 | 104 | 72 | 7.0 | 27.4 | 5.2 | 6.1 | -3.7 | -1.5 |
| EE | 84 | 6.2 | 4.9 | 25.8 | 16.6 | 696 | 398 | 3.4 | 25.6 | 6.4 | 7.0 | 2.3 | 3.2 |
| FI | 109 | 5.5 | 6.1 | 14.5 | 12.0 | 238 | 182 | 24.5 | 36.7 | 7.4 | 6.7 | 7.0 | 6.6 |
| FR | 112 | 3.7 | 3.7 | 9.5 | 7.6 | 158 | 126 | 10.4 | 14.1 | 5.7 | 5.1 | -2.7 | -2.2 |
| DE | 102 | 4.2 | 3.8 | 16.0 | 12.1 | 159 | 120 | 2.1 | 12.4 | 6.9 | 5.5 | -5.2 | -3.2 |
| GR | 109 | 2.1 | 2.1 | 10.4 | 9.5 | 150 | 132 | 7.8 | 15.0 | 4.8 | 4.2 | -3.2 | -2.7 |
| HU | 96 | 2.6 | 2.1 | 9.1 | 5.8 | 375 | 237 | 3.9 | 16.2 | 4.2 | 3.3 | -1.9 | -0.9 |
| IE | 131 | 2.7 | 2.9 | 16.3 | 13.1 | 140 | 78 | 2.3 | 7.7 | 6.5 | 4.8 | -1.9 | -1.1 |
| IT | 105 | 2.5 | 2.6 | 9.2 | 7.5 | 115 | 104 | 3.8 | 16.7 | 5.2 | 4.5 | -4.1 | -3.5 |
| LV | 76 | 3.0 | 2.2 | 9.9 | 5.8 | 483 | 221 | 17.6 | 37.1 | 4.6 | 6.5 | 2.3 | 3.0 |
| LT | 80 | 4.1 | 1.9 | 13.1 | 6.8 | 592 | 209 | 3.1 | 22.7 | 4.0 | 6.2 | -0.9 | -0.2 |
| LU | 142 | 9.2 | 8.0 | 34.6 | 23.0 | 144 | 102 | 1.7 | 3.5 | 12.5 | 13.1 | -10.7 | -11.5 |
| MT | 120 | 1.7 | 2.1 | 7.4 | 7.6 | - | 122 | - | 3.7 | - | 4.5 | - | -3.8 |
| NL | 113 | 3.8 | 3.9 | 15.2 | 12.3 | 168 | 127 | 1.3 | 4.8 | 5.9 | 5.8 | -4.8 | -4.7 |
| PL | 100 | 2.6 | 2.4 | 12.3 | 10.4 | 519 | 250 | 2.5 | 11.4 | 4.4 | 4.3 | -2.4 | -2.3 |
| PT | 105 | 1.6 | 2.0 | 6.1 | 6.4 | 151 | 134 | 26.9 | 25.7 | 4.3 | 3.9 | -2.7 | -2.3 |
| RO | 86 | 2.5 | 1.5 | 10.6 | 5.8 | 530 | 241 | 3.4 | 23.9 | 4.3 | 2.6 | -2.2 | 0.1 |
| SK | 102 | 3.8 | 2.9 | 14.1 | 7.9 | 503 | 237 | 2.2 | 10.1 | 2.7 | 4.4 | 0.2 | -1.7 |
| SI | 103 | 2.9 | 3.3 | 9.3 | 8.9 | 268 | 196 | 12.4 | 22.4 | 3.3 | 4.7 | -1.0 | -2.4 |

| | | | | | | | | | | | | | |
|-------------|-----|-----|-----|------|-----|-----|-----|------|------|-----|-----|------|------|
| ES | 120 | 2.2 | 2.4 | 7.6 | 7.2 | 144 | 117 | 10.5 | 15.3 | 4.5 | 4.0 | -2.9 | -2.4 |
| SE | 112 | 5.3 | 4.9 | 8.6 | 6.0 | 205 | 129 | 34.1 | 52.0 | 6.5 | 6.5 | 5.3 | 3.9 |
| UK | 112 | 3.5 | 3.0 | 14.2 | 9.4 | 166 | 104 | 0.7 | 5.7 | 5.9 | 5.1 | -4.4 | -3.8 |
| EU28 | 106 | 3.3 | 3.1 | 12.0 | 9.1 | 173 | 128 | 6.1 | 15.2 | 5.8 | 4.9 | -1.9 | -1.8 |

Note. The abbreviations of countries and indicators used are in accordance with those presented in Figure 1 and Table 1. Data for EI is compared to 1995, for ED and EF for SK, SI, CZ from 1993, and for EE, LT, LV, HR, SI from 1992. ED and EF for EU28 is based on the average in the member states (excluding Malta in 1990). Population in FR is based on the data in 1991. The data for EF and ED are from Global Footprint Network, 2017, but for the rest of the indicators including population from Eurostat, 2017.

CONCLUSIONS

The member states of the EU effectively decrease their ecological deficit. The deficit calculated on average for -1.8 gha per capita in 2013, compared with the most developed countries such as the US (-4.8 gha per capita) or Japan (-4.3 gha per capita) (Global Footprint Network, 2017), places the EU at the forefront of resilient economies, which successfully is heading towards maintaining sustainable balances between its economic and ecological systems.

The energy policy of the EU is interrelated with the environmental/climate change policy. The targets for 2020 aim for secure, sustainable, and competitive energy. However, the final results are strongly dependent on a variety of socioeconomic, demographic, and ecological conditions. The strategy of energy policy in a particular country has to be designed according to the circumstances. It is an evolutionary process in which the goals can be achieved by means of various strategies, and it requires consideration of a wide range of determinants. A resilient economy is defined by an ability to adopt the policy goals to the wide portfolio of interrelated factors. For example, a low level of energy consumption with low efficiency can lead to the same ecological footprint as a higher level of energy consumption with superior efficiency. However, the latter results in greater welfare and is more desirable from the socioeconomic perspective.

Sustainable energy in the terms of ED assumes the demand of energy within the ecological limits of an economy. Expansive economies in particular should revise their strategies to look for solutions that stabilise their ecological footprint, otherwise they will be areas in which it will be difficult to secure energy and maintain conditions for sustainable development.

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Efficiency of waste management in local governments. Case study from Poland

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ABSTRACT

The main purpose of paper is the analyze of tasks efficiency related to waste management in the Polish local government. The study sought a correlation between the costs of providing services per capita and the size of the municipality (economies of scale) or population density (economies of scope). All municipalities in Poland (2478 units) were examined. The financial data has been compiled on the basis of municipal budget reporting. Data on population and population density come from the Local Data Bank of the Central Statistical Office. The study does not confirm the relationship between size and efficiency. Similarly, there is no connection between the density of population and the costs of services provided. The test results do not show also regional differences (depending on location).

Keywords: waste management, local government, effect of scale, public services efficiency.

INTRODUCTION

The organization of public sector is influenced by institutional order, also at local level. It manifests itself in the nature of self-government administrative structures which, quite extensively, take over the task of providing a wide spectrum of decentralized public services. Therefore, a self-government plays the role of such public sector component which is the closest to an individual inhabitant and this is frequently considered the decisive factor regarding its overall perception by local residents. Therefore, it does not surprise that the problem of this particular self-government level proper organization, which covers the issues of overall system efficiency and effectiveness, becomes the core component of public debates. One of the main issues under debate is the size of self-government units at local level. A frequently repeated argument, often in an axiomatic form, relates to the standpoint that larger units are capable of executing their functions and tasks, for performing which they were appointed, in a better and more effective way.

The objective of the hereby paper is to describe relations between the size of local government unit in Poland and the efficiency of its functioning. The research focused on the tasks of municipalities in the field of waste management. In the introductory part of the work the method of critical analysis of the literature of the subject was used. The main research was based on statistical methods (mainly correlation measures). Data exploration as well as map visualization were made with use of location intelligence system consisting of ArcGIS 10.6 combined with Tableau 10.5 (Szewrański et al. 2017). The analysis in this paper attempts to extend the knowledge about problem of economies of scale in the public sector and to include itself among the few studies that deal with the topic in Poland (Kachniarz at al. 2017) It also contributes to the discussion on using the principle of economies of scale at the municipal level.

THEORETICAL BACKGROUND

Local self-governments are an integral subsystem of democratic regimes, responsible for local development and the delivery of a large amount of local public services. Their important role in modern society is stressed in the main economic theories, including Oates’s decentralization theorem (Oates 1972, 1999) and the idea of fiscal federalism (Tiebout 1956; Musgrave and Musgrave 1989). Local self-governments are codified on the political level (European Charter of Local Self-government). However, the patterns of local self-government differ, with national variations and specific characteristics related to history and the current will to decentralize.

Economies of scale is the theory of the relationship in the scale of the use of a properly chosen combination of all productive inputs and the rate of the output of the enterprise. The importance of economies of scale for large organizations was first brought to public attention by Stigler (1958) and Coase (1937). It is also applicable to the public sector and to local governments, when local self-government is seen as a production unit (Hirsch 1959; Sawyer 1991; Boyne 1995; Houlberg 2010; Faulk and Hicks 2011; Przybyła 2017).

One of the major differences among local self-governments is the size of municipalities. Some countries, such as UK, Ireland, Denmark, Sweden and Latvia, are well known for amalgamated local-government systems; other countries, including the France, Czech Republic and Slovakia, have a high number of very small municipalities. Smaller local units may stimulate a higher level of participation of citizen in local issues, but most economists assume that such small size causes higher unit costs of public-service delivery. Local governments that are too small are expected to suffer from a lack of resources and a lack of competence and expertise; fragmentation thus probably increases the direct and indirect costs of public-service delivery. Because efficiency is more and more important for national governments, several European countries decided on a process of territorial consolidation or amalgamation. In Denmark, the number of municipalities decreased from almost 280 to 98 between 2000 and 2010; in Finland, from 436 to 342; and the Netherlands reduced the number of municipalities from 400 to 150 (Baldersheim and Rose 2010). This phenomenon is not limited to Europe. Municipal amalgamations have also taken place in Australia (Dollery et al. 2008) and in several Canadian provinces (Kushner and Siegel 2003).

Many years of experience in carrying out the city-county consolidation reforms resulted in an abundant research output in terms of their effects (Kachniarz 2011). Many authors are careful in summarizing their research findings which are inconclusive, some of them conclude that consolidations did not result in desirable effects in terms of relatively cheaper functioning, others point out that the differences in unit costs of small and large administrative units are insignificant. This situation reflects the fact that the question of the “optimum size of municipalities” is a typical “wicked problem” and does not have an absolute answer (Swianiewicz 2018., Tavares 2018).

MATERIALS & METHODS

The subject of research

Since July 1, 2013, a new municipal waste management system has been implemented in Poland. This change is important enough to be, in the public debate, commonly referred to as the “junk revolution”. Following the initial phase of this reform implementation, 2016 was the first year when all elements of the new system were finally implemented. A municipality responsible for organizing waste collection and ensuring its proper processing has become the owner of waste. Regardless of their size, all municipalities received the same tasks and competences. Effective environmental management should be aided by indicator-based monitoring of consumption and waste production as well as data-driven decision support systems designed and applied at local level (Kazak and Szewrański 2013; Kazak al. 2017; Kazak 2018). Initially the study covered all municipalities in Poland. Their total number as at December 31, 2016 was 2 478. An average municipality is inhabited by approx. 15 000 residents and covers the area of 126 km². In this respect Poland belongs to the group of countries characterised by an average size of this basic territorial division unit. In the course

of data verification approx. 10% of municipalities were eliminated from further analyses. The largest group (206 units) was represented by the municipalities which delegated waste management tasks to municipal unions, established specifically for this purpose. They were not taken into account at this research stage due to the different nature of these unions functioning. In addition, 42 municipalities were excluded from the research as their financial outlays for waste management were burdened with episodic investment costs of waste disposal installations. Thus, following ultimate verification 2 229 municipalities were qualified for further research.

Data sources

The reform introduced the principle of uniform current expenditure accounting regarding tasks related to waste collection and treatment. All municipalities in Poland have to classify this expenditure in the same section of budgetary classification. The municipalities which delegated these tasks to municipal unions remain the exception, which justifies their aforementioned exclusion from the carried out research. Financial data were obtained from section 900, chapter 90002 of the budget reporting system, generated by the Ministry of Finance (BeSTi @ electronic database). Investments and property expenditure related to the construction of installations for the segregation, disposal and storage of waste were excluded from the research. As opposed to current outlays, this category of expenditure is not comparable for all municipalities. The organizational freedom of municipalities allows for the implementation of such investments either directly by a municipality or by external entities (constituting either municipal or private property). This results in a different position of investment expenditure in the budget reporting systems (or the absence of their presentation – in the case of private investments). The data allowing to determine the size of municipalities (population, area) and population density were obtained from the Central Statistical Office. They are collected and published, as part of an open access by the Local Data Bank.

Research methods

The first stage of the research consisted in the selection and initial analysis of the values characteristic for the current expenditure on waste management. Their level was brought down to comparable values by calculating them per 1 resident of a given municipality. In the second stage, the data characteristic for a municipality size and the intensity of phenomena related to waste management were compiled. In the first case the population criterion was applied, whereas in the second population density (population per 1 km²). The third, main research stage focused on analysing correlations between explained variables (expenditure per capita) and explanatory variables, i.e. municipality size (economies of scale) and population density (economies of scope). Pearson linear correlation coefficient was used to analyse the strength of the discussed correlation. The following scale was used to assess correlations between variables:

$0 \leq |r| \leq 0,3$ weak correlation

$0,31 < |r| \leq 0,6$ moderate correlation

$0,61 < |r| \leq 1$ strong correlation

In order to complete this task, a graphical analysis of the correlation was made in the form of graphs presenting the dispersion of the obtained results. These graphs were supplemented by the trend line in the form of R² regression coefficient. The fourth research stage consisted in visualizing the results in the form of map cartograms. For this purpose, the administrative division maps of the country and the classification methods available in ArcMap 10.6 programme were used. It was decided to use Jenks natural breaks method – municipalities were grouped into classes with their boundaries designated where there were relatively large differences between data values. This stage aimed at detecting possible spatial correlations and regional variations in the obtained results.

FINDINGS

The initial analysis of the collected characteristics' value allows concluding that the level of municipal expenditure on waste management remains highly diverse. After verifying and excluding some municipalities (municipal unions, investments), the minimum value was PLN 6 (Siechnice municipality), whereas the maximum one was PLN 316 (Wrocław city). Interestingly, they are adjacent municipalities located in one agglomeration. The median for the entire group of analysed municipalities (2 229) stabilized at the level of PLN 94 per capita. The correlation coefficient value between the level of expenditure per capita and the number of municipality residents (economies of scale) amounted to 0.0471. This practically indicates the absence of such correlation. Graphical data analysis is presented on Figure 1.

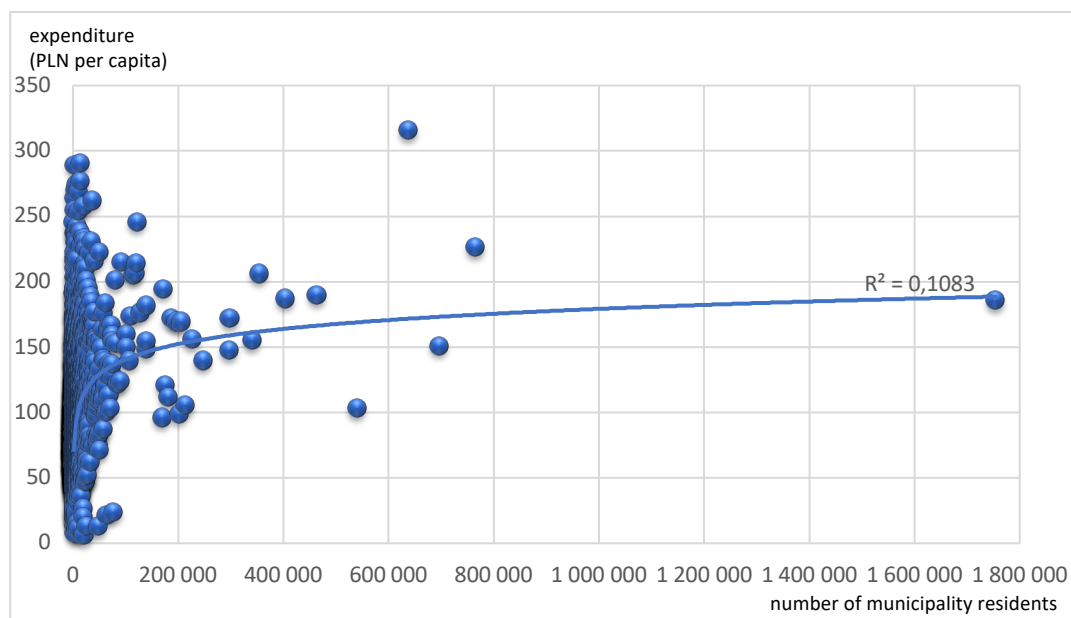


Figure 1: Expenditure on waste management(per capita) and the municipality size

R^2 coefficient has taken the value of 0.11, which makes it hard to explain the relative value of expenditure depending on a municipality size. Such assumption is also unfounded due to an extensive dispersion of results. The situation does not change after dividing the analysed municipalities into smaller groups either. Not only in the group of small rural municipalities, but also in medium-sized cities and the largest cities with over 100 000 residents, can an increased efficiency of the analysed services can be detected with reference to larger units. Therefore, the conducted study cannot prove the correlation between the relative amount of current expenditure on waste management (per 1 resident) and the size of a municipality. Thus, the effect of economies of scale, in terms of municipal services, has not been proven.

The next research stage was focused on searching correlations between the relative amount of expenditure on waste management and population density. It can be expected that the unit cost of services can be higher (economies of scope) in less intensely developed areas (characterised by dispersed investment structure). Therefore, current expenditure per capita against population density was compared in individual municipalities. The calculated Pearson correlation coefficient for these two variables was 0.4184, which indicates the occurrence of moderate correlation (Figure 2). The direction of this correlation remains, however, positive, thus the value of expenditure per capita is higher along with higher population density. Therefore, the result is different from the one intuitively expected and can be referred to as dis-effect of scope. Graphic analysis shows a significant dispersion of results, which indicates the absence of linear correlation.

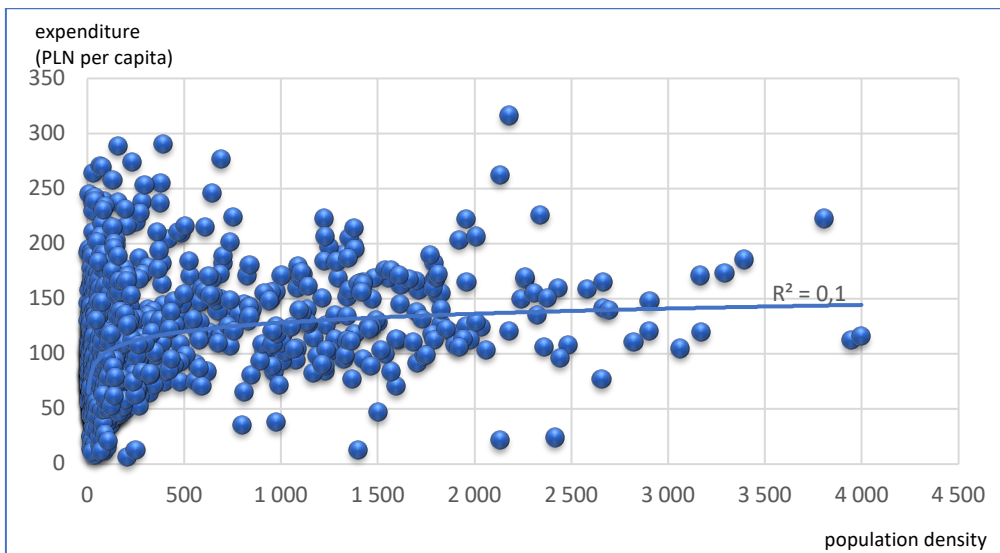


Figure 2: Expenditure on waste management(per capita) and population density

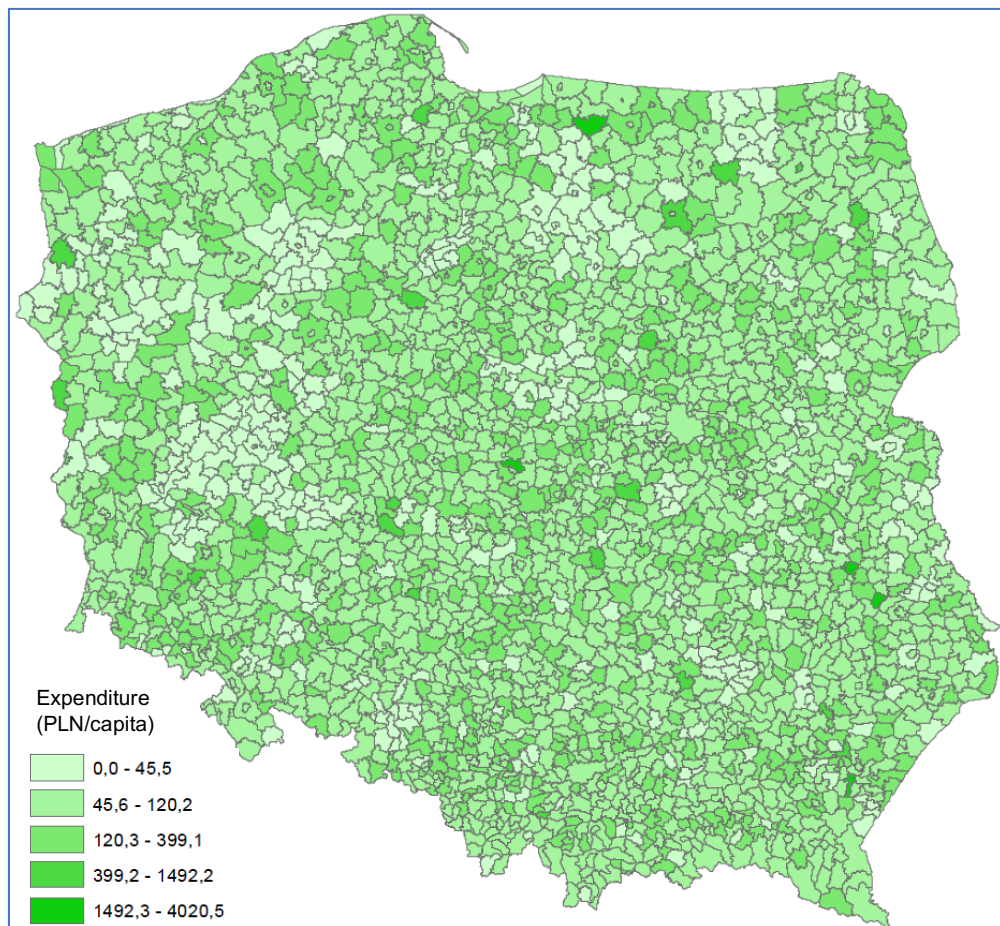


Figure 3: Expenditure on waste management (PLN/capita) in Polish municipalities

Thus, as in the case of economies of scale, it cannot be confirmed that the efficiency of municipal services in terms of waste management is lower in less populated areas.

Spatial analysis of expenditure value per capita was the final stage of the conducted research. The underlying motive was to study the efficiency of operation depending on the location. The results are presented on Figure 3. Also in this case, it is hard to find regional differences – municipalities characterised by high and low values of expenditure per capita form a diversified mosaic in each Polish region.

CONCLUSIONS

The implementation of the same principles and standards, in terms of waste management, in all municipalities in Poland offers a potential field for research into their efficiency. Standardized budget reporting makes these services one of the most transparent in terms of expenditure. Hence, all these factors combined provide an opportunity for in-depth analyses of technical services efficiency, covering almost a complete group of units. The research carried out and discussed in this article is the first presentation of its kind following the comprehensive reform of waste management system in Poland.

The above presented results do not confirm the arguments frequently voiced in the course of public debate that larger municipalities are characterized by higher efficiency of operation. Just as it is impossible to prove the hypothesis that rural municipalities, characterized by lower population density, incur higher costs than cities where services are more concentrated. Therefore, the presented research results contradict the approach that “bigger is better”, which often puts pressure on consolidating tasks in municipal unions. The arguments for economies of scale effect also result in the establishment of such unions in Poland. Waste management remains the task of the majority of them. Due to differences in budget reporting, the municipalities belonging to unions were excluded from this study. Including them in such analyses and comparing the effects of tasks consolidation can be taken up as the continuation of this research stream, along with expanding these studies by further time intervals, allowing to determine the dynamics of changes. It may be of significant importance, given the fact that waste management system in Poland still presents an early stage, after the comprehensive reform has been implemented.

Concluding, it should be highlighted that other factors than economies of scale and economies of scope do occur and have impact on the final picture of the municipalities’ efficiency in terms of waste management. It turns, it seems likely that municipalities use economies of scale in a different way – not by combining administrative structures. The same effect can be achieved by delegating such tasks to specialized companies. A portfolio of orders collected by such companies from many municipalities offers an opportunity for higher professionalization of operation and achieving both economies of scale and scope from such activities, regardless of whether they are private firms or municipal companies. The research results presented in this article should, therefore, be approached as an introduction to more advanced analyses, the scope of which has already been outlined.

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Problems of Development in Poland and Turkey – selected issues problems (regional and rural development)

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INTRODUCTION

Considering a lot of states, EU candidates and countries of accession, there are various developmental problems, especially the level of development of rural areas and regions. In this study, the attempt was made to discuss the issue of developmental problems of regions and rural areas at the regional level in two countries, Poland and Turkey, one which is in the EU and the other one EU candidate. The aim of the paper is to present developmental problems of rural areas and regions at the regional level in two countries, Poland and Turkey.

Key words: regional development, rural development, Poland, Turkey

REGIONAL DEVELOPMENT CONCEPT AND ITS HISTORICAL PROCESS IN TURKEY

Turkey's administrative structure has no basis of “zone” and provinces are considered as the largest local government units in the constitutional arrangements of the country. The concept of regions in Turkey is based on the topography and climatic conditions. Throughout the recent years, some arrangements have been made depending on the harmonization process along with the EU acquis.

Since the establishment of the Republic in Turkey until 1960s, no significant regional policy recommendations had been noticed. In the 1960s, regional policies began to be formed along with development efforts focused on growth centers during the period coincided with the shift to planned economies. In that period, large-scale productive transitions have begun, even though unlike of liberal Western democracies; there has been a change in terms of production-accumulation-regulation in the country once the social state concept have been adopted (Eraydin 2004). After the establishment of the State Planning Organization (SPO) in 1960, the management of economics development along with development plans, preparation and implementation of development plans have been devolved on the Organization by the 1961 Constitution and the economic targets of the country are shaped according to 5-year plans prepared by the institution. In these development plans, the main responsibility for the provision of interregional equilibrium has been assumed by the State. According to this, the State is expected to direct social services and facilities towards underdeveloped regions. Infrastructure investments in these regions would have been accelerated and the State aimed to bring economic investments to these regions (Arslan and Demirel 2010). Since the increasing rate of population withdrawal from agriculture would occur in this period, it was stated that the agriculture sector needed to open up more to the market economy in order to prevent bottlenecks in food supply of cities and to eliminate regional price differences (The 1st Five-year Development Plan). During this period, the impacts of rural-urban migration process which began in the 1950s in Turkey especially on the agricultural sector are seen.

The second period on regional development would be regarded as the period between 1980 and the beginning of EU negotiations. In the economic literature, 1980 is considered an important year of transformation. With the decisions taken on January 24th of this year, structural changes in the political economy have begun. These decisions are aimed at Turkey's complete transition to free market economy and its integration with the international capital. Institutional and structural reforms such as reduction of the public sector's share in the economy, smoothing the path for the private sector, establishment of capital markets, and introduction of free foreign exchange regime have begun to be effectuated. In the context of regional development, private sector incentives have also begun to play an important role as well as direct investments made by the State (Kargı 2009).

The EU-Turkey negotiation process and its aftermath can be accepted as the third period regarding the regional development policies in Turkey. Relations between the EU and Turkey which started with the Ankara Agreement signed in 1963 involve quite a long integration process. Along with the opening of the negotiation process in 2005, many legal arrangements have been made so far to harmonize with the EU acquis. Therefore, today's regional policies are shaped by the alignment process with the EU acquis, and the Regional Policy and Coordination of Structural Instruments has been opened to negotiations in 2013.

A regionalization system has been established within the EU member countries in order to eliminate the interregional imbalances among the member states and to provide a common ground for them to benefit from the funds provided by the EU. With this system, obtaining the comparable data belonging to each region and determination of differences among the regions are aimed (EUROSTAT). Statistical Regional Unit Classification has begun to be implemented by decision of Council of Ministers No. 2002/4720 dated 08.28.2002 to create database of statistical comparison in compliance with the EU system which would be used as a guidance for applications in reducing regional disparities in Turkey and the determination of the target region in the planned regional development efforts (TurkStat, <http://www.turkstat.gov.tr>). “Statistical Region Units Classification consists of three stages. In the first stage, 81 provinces are defined as regional units in the third level according to the administrative structure. Upon grouping by taking a given population size of similar provinces into consideration besides their economic, social, cultural and geographical aspects, 26 regional units are defined in the second level. As a result of the grouping of the second level regional units according to the same criterion, 12 regional units are defined at the first level.” (TurkStat, <http://www.turkstat.gov.tr>)

REGIONAL DEVELOPMENT AGENCIES

The establishment of Regional Development Agencies has been one of the most important consequences brought by Turkey-EU relations with regard to Regional Development. Development Agencies are established in İzmir and Çukurova regions covering İzmir and Adana-Mersin provinces with the “Decision of Council of Ministers on the Establishment of Development Agencies in Some Level 2 Regions” published in the Official Gazette No. 26220 dated 6 July 2006. With the Decision of the Council of Ministers No. 2008/14306 dated 10 November 2008 and published in the Official Gazette dated 22 November 2008, 8 more development agencies are established. With the establishment decree published in the Official Gazette No. 27299 dated July 25, 2009; 16 more Development Agencies are established and the establishment process of development agencies has been completed based on 26 Statistical Areas of the second level in Turkey.

Development agencies in Turkey are institutions which are expected to contribute to minimization of internal migration by eliminating regional disparities and promoting interregional competition. In order to fulfill these expectations, the development agencies are obliged to determine the current potential of the region in which they operate first, and then to attract appropriate investments to the region for efficient and productive use of this potential.

In doing so, cooperation between the public sector, the private sector and non-governmental organizations is crucial (Özer et al 2017).

While regional development as an integral part of national development has been formed policies conducted by central bureaucrats in Turkey for many years, specific development potentials of the regions the region has been blocked. Along with the EU accession process, the old habit of creating development policies without knowing the pros and cons of the regions in Turkey is being abandoned. While participatory methods are now being adopted in the direction of the demands reported to the central government, it is necessary to develop policies specific to the region and to find appropriate administrative structures to implement the policies developed (Ulan and Saygı 2016).

Development Agencies are newly experienced in Turkey with their positive impacts and shortcomings. One of the risky areas in the experience of the Development Agencies in Turkey is the revenue they obtain from the municipalities. While the percentage of realization of the shares allocated to the development agencies from the central budget and the resources to be transferred from the Special Provincial Administrations is considerably high, the resources transferred from the municipalities are well below the expected level. This is a sign that the agency revenues are not adequately secured and that the municipalities are not sufficiently convinced of the Development Agency project (Akpınar 2012)

On the other hand, the regional development agencies in Turkey are criticized since they tend to develop differentiated strategies at the end of the day due to the tendency to find solutions to all the issues, as well as they fail to assess the links with adjacent regions and the outside world adequately by developing strategies only for their own jurisdiction. Criticism about the system and institutional structure can be increased (Serteser 2015).

Development agencies have always been active in certain fields such as financial and technical support, social responsibility, education, promotion, guidance since the day of their establishment. However, it is not easy to obtain and interpret the data for determining whether or not these activities can get rid of interregional and intra-regional developmental differences. Instead of expressing institutional activities only in numerical data (such as direct support, financial and technical support, training programs) in the activity reports of the development agencies, the efficiency and productivity of the regional activities should be mentioned.

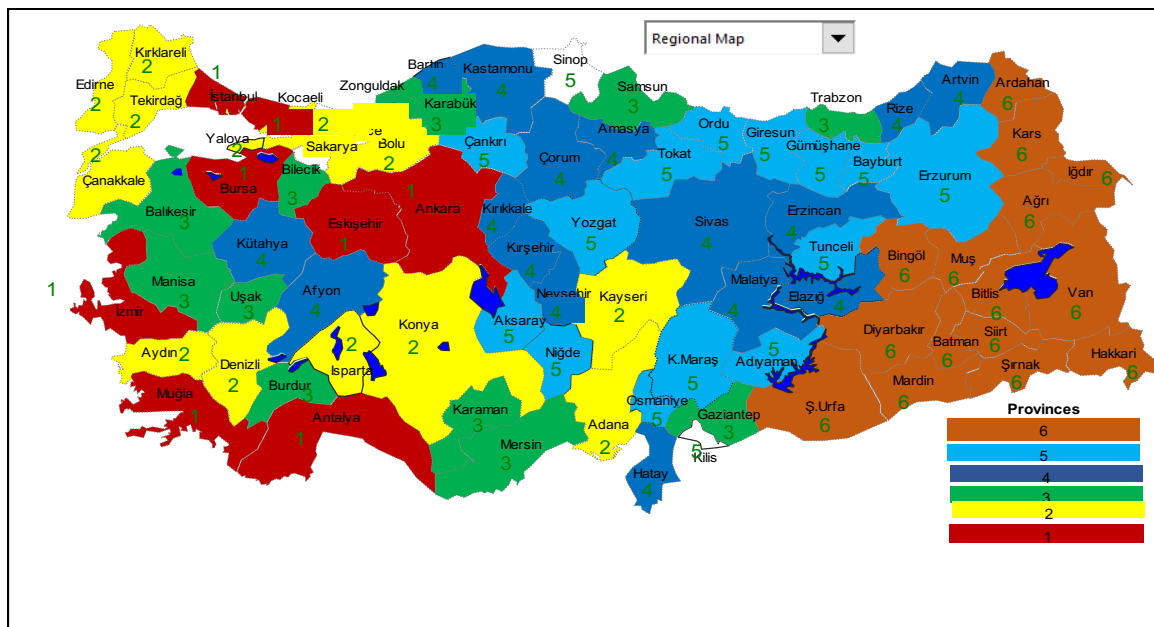
In addition, each development agency must be evaluated separately in order to assess whether or not it is subjected to fair criticism since the first time development agencies hit the agenda in Turkey (Tahtalıoğlu and Özgür 2016).

REGIONAL POLICY INSTRUMENTS

The basic tools implemented in order to minimize interregional socio-economic development disparities are public investments and fiscal incentives in Turkey. As a matter of fact, the existing incentive system is basically based on regional priorities. However, it is seen that sectoral division is also important since social investments such as education, health and infrastructure investments can be supported as well. It is noteworthy that in the scope of the support system, a system in which investment issues created under the framework of the market mechanism are supported by tax deductions and exemptions is preferred rather than supports that can be considered as direct resource transfers.

Another tool used in Turkey to influence the industry’s location choice decisions and to indirectly support regional development is promotion for the establishment of organized industrial zones (OIZs) and small industrial sites (SISs). As of 2018, the number of OSBs has reached 310.

A system of incentives differentiated by sector and by region is the most common tool used for regional development in Turkey. This system is applied at different rates according to development levels of the provinces. The incentive system, which became effective as of 2012, is classified into 6 regions and consists of 5 components such as General Investment Incentive Scheme, Regional Investment Incentive Scheme, Priority Investment Incentive Scheme, Large Scale Investment Incentive Scheme and Strategic Investment Incentive Scheme. Graph 1 illustrates the distribution of 6 regional categories according to provinces. The highest and the lowest support rates are in the 6th and the 1st regions, respectively. Accordingly, the investments made in the Eastern and the South-eastern regions of Turkey are supported at the highest rate.



Source: Ministry of Economy (www.economy.gov.tr)

Figure 1: Classification of Provinces for the Implementation Purpose of the Investment Incentives Program

Table 1 contains the support elements provided in the regional incentive schemes. Investments to be made to the 6th region have been provided with considerable incentives and in parallel with the negotiation process of the EU, underdeveloped regions are protected at a higher level.

Table 1: Regional Investments Incentive Scheme Measures

Source: Ministry of Economy (www.economy.gov.tr)

| INCENTIVE MEASURES | REGIONS | | | | | |
|------------------------|---------|-----|-----|-----|-----|-----|
| | I | II | III | IV | V | VI |
| VAT Exemption | YES | YES | YES | YES | YES | YES |
| Customs Duty Exemption | YES | YES | YES | YES | YES | YES |

| | | | | | | | | |
|--|---|------------------|---------|---------|----------|----------|----------|----------|
| Tax Deduction* | Rate of Contribution to Investment* (%) | Out of OIZ or IZ | 15 | 20 | 25 | 30 | 40 | 50 |
| | | Within OIZ or IZ | 20 | 25 | 30 | 40 | 50 | 55 |
| Social Security Premium Support (Employer’s Share) | Support Period | Out of OIZ or IZ | 2years | 3years | 5 years | 6 years | 7 years | 10 years |
| | | Within OIZ or IZ | 3 years | 5 years | 6 years | 7 years | 10 years | 12 years |
| Land Allocation | | | YES | YES | YES | YES | YES | YES |
| Interest Support | Local Loans | | | | 3 Points | 4 Points | 5 Points | 7 Points |
| | Foreign Exchange/ FX denominated loans | | - | - | 1 Point | 1 Point | 2 Points | 2 Points |
| Social Security Premium Support (Employee’s Share) | | | - | - | - | - | - | 10 years |
| Income Tax Withholding Support | | | - | - | - | - | - | 10 years |

Note: OIZ: Organized Industrial Zones; IZ: Manufacturing Investments in Specialized Industrial Zones

Within the scope of incentive certificates issued for manufacturing sector (US-97 Code: 15-37); Rate of contribution to investment for each region shall get 15 points additionally and tax deduction rate for each region shall be applied as 100 per cent for the investment expenditures that would be realized between the dates of 1/1/2017 and 31/12/2018.

Besides incentives, public investments are the basic tools used in Turkey. It has been observed that investments in public services and infrastructure are effective tools for economic development. However, public investments which are initially used as an effective tool have been diminished and became ineffective. Therefore, the utilization of public industrial investments as a tool for regional development has been abandoned and the pioneering of industrialization has been given to private investments. The State’s investments are mostly focused on infrastructure and transportation, and these regions are intended to become more integrated with other regions.

DEVELOPMENTAL PROBLEMS OF RURAL AREAS AND REGIONS IN POLAND

In Poland there is a big diversity in terms of development and economic potential of individual regions, which is connected with the historical division into three partitions in the past.

Regardless of the historical division, it is observed that each region in our country has a better developed central zone (the growth centre) with the suburban zone and the peripheries, which are less developed.

There are numerous developmental problems in rural areas in Poland, which are generally more difficult to be solved than in cities. The country is getting more and more diverse, both in regional terms and socio-economic ones, even because of the agro diversity. There is a constant transformation of these areas, for example, their agricultural function is also changing into the forest one or another one connected with multi-functionality of rural areas. The result of new non-agricultural functions of the country is development of small and medium-sized enterprises, frequently connected with craft or tourism. Currently, the Polish rural areas face a lot of challenges, which especially include a problem of depopulation of the country as well as a necessity of further adjustment of agriculture to the requirements of the common market and competition in the markets in the world. The rural areas face serious challenges and their developmental power is entrepreneurship of their inhabitants.

The importance of rural areas in Poland is significant, both from the economic, social and environmental point of view, whereas the problems of the country and agriculture of our state are of the structural character.

The rural areas are to be a place of the realization of many functions, but also quantitative and qualitative changes concerning:

- an increase in the amount of income connected with the consumption model and the quality of life;

- structural transformations in economy, infrastructure and space linked with development of non-agricultural activity in the country, and at the same time with the occupational structure of rural population, biodiversity, protection of the landscape value or implementation of innovations;
- counteracting economic and social marginalisation as well as depopulation of rural areas and the phenomenon that fewer and fewer women want to work in agriculture and also cyberspatial exclusion;
- technical and technological development concerning a production process as well as farms, including access to information technology, access to public services, the use of latest production technologies.

A lot of rural areas face serious problems. *The Agricultural and Rural Development Strategy 2007-2013* presents three basic groups of these problems:

- **economic** (lower than the average income, aging of rural population, a high dependence on the agricultural sector),
- **social** (higher than the average unemployment rate, social exclusion, a low diversity of the labour market and the low density, which influences the worse access to the elementary services),
- **environmental** (the pro-environmental role of agriculture and forestry).

As the literature on this subject emphasizes, **the problematic space includes a lot of elements which especially include:**

1. Demography.

The social – economic condition of the state significantly influences the demographic structure of rural population. It mainly refers to instability in the labour market which affects young people residing in rural areas to a large extent, especially in the so-called Eastern Wall of our state and transfer of people to the post-working group.

The chances to get a non-agricultural job and win competition in the rural and city labour market are directly connected with the level of education and qualifications. There is a distinct dependence between a level of people's education and the situation in the labour market, whereas the young stay in developmental farms.

Admittedly, within 14 years (1995-2009) bigger changes connected with aging population occurred in towns than in villages, both rural population and urban one are "old" demographically, i.e. both populations are getting old.

Discussing the demographic changes one should also pay attention to migrations. Permanent migrations between the country and a town were the second, after the natural increase, elementary factor influencing the growth of the number of rural population. We are observing the so-called phenomenon of suburbanization (immigration from towns to the country was higher than emigration from the country to towns), which is connected with urbanization of suburban areas. But emigration abroad contrary to inner emigration was a factor decreasing the number of rural population.

2. Education

The need of education of the population dwelling in rural areas understood as schooling is on the higher and higher level as well as activation of prosocial attitudes is a vital issue concerning employment and unemployment and competitiveness in the labour market, both in urban and rural areas. More and more often, the low level of education generates next unemployed persons, whereas higher education does not guarantee work either in towns or in the country. The education level of the unemployed is a very important issue – it is lower in the country than in cities. Moreover, the results of the research regarding professional aspirations of rural adolescence indicate less ambitious plans in comparison with urban young people.

3. Non-agricultural economic activity

The importance of non-agricultural entrepreneurship in rural areas is great, whereas it often depends on the agricultural structure and natural values as well as the economic potential. Entrepreneurship in rural areas is an incentive for absorption possibilities of existing surpluses of the labour market, development of human resources and opening of rural population to new directions of economic activity. It generates additional or alternative incomes for rural society (in comparison to the income from the non-agricultural activity). All of it contributes to the increase in the quality of life of inhabitants of rural areas. The development of non-agricultural entrepreneurship is both an essential factor of the inflow of innovative technologies for agriculture and an important factor of the development of economic initiatives stimulating the multifunctional development. Furthermore, initiating an economic activity in the region triggers the multiplier effect in the field of investment and consumption, leading to the increase in the level of social - economic development as well as the region and the state.

With regard to the big human resources in rural areas, it is necessary to provide the rural population with work and increase income through the development of non-agricultural activities as well as preventing them from emigrating to cities and abroad. The low income, resulting from the insufficient use of labour resources of rural families, is a fundamental social – economic problem of the country. Therefore, the burden of employment should be taken by non-agricultural activities, but support for the process of creating non-agricultural working places in rural areas is crucial.

4. Technical and social infrastructure

The appropriate level of the development of the technical and social infrastructure is a condition of the fast growth of entrepreneurship in rural areas. The lack of the development of the technical infrastructure does not only decrease the standard of living and functioning of rural population, but also results in poor attractiveness of rural areas for potential investors. The technical infrastructure stimulates the economic development, for instance, through development of entrepreneurship and is a basis for the economic activity. The important issue connected with the development of rural areas is an access to the technical infrastructure and a provision of inhabitants with elementary installations such as a sewage system, an electricity network or a gas one. The social infrastructure is generally scattered which results in the fact that the inhabitants of the country have to go further to get to health centres or school than the urban population. One of the problems in rural areas is the issue of water supply from the network of waterworks and the removal of sewage or waste, where the situation is improving more and more in the field of environmental protection.

5. Quality of life in rural areas

The important issue is the worse quality of living in the country than in cities, which has already been mentioned, i.e. a lower income of the country dwellers in comparison with the inhabitants in cities, the worse degree of satisfying needs, a lower level of the technical infrastructure, the worse household equipment, i.e. modern durable goods.

The average inhabitant of the country had a lower income than the average income of a city dweller: by 30.2% in 2006, and by 29.6% in 2014, which has not been satisfactory 10 years after joining the EU. The high percentage of income in the structure of farmers' income is from contract work, and among the elderly from the retirement pension. Recently, the country is becoming a place of living for persons employed in cities, often having a high income which results in social changes and the increase in income from non-agricultural work.

6. Labour market

On joining the EU by Poland, rural communities have started to differentiate socially, culturally and economically. Apart from the typically agricultural activity, the business activity mainly trade and services have been stimulated as it is the simplest way to start a non-agricultural activity.

Despite this fact there has still been a problem of the surplus of the number of employed people in agriculture and their relatively high percentage in the total of the employed since the accession into the EU.

Rural unemployment (open and hidden) and limited possibilities of employment in rural areas, especially Eastern Poland, are the most vital problems to overcome. They have become the elementary issue in the labour market, including the problem of the lack of young people who emigrated to cities and abroad as well as the lack of seasonal workers, which has been lately decreased by the inhabitants of Ukraine coming to Poland.

7. Poverty

Nowadays the problem of poverty is slowly decreasing owing to funding farms from the European Union and the programme 500+ implemented by the Polish government. Nevertheless, it should be remembered that poverty in the country is difficult to be estimated since scattering of rural settlement, a wide access to food and possessing an own house influence this situation.

The differences in the level of social – economic development between cities and villages existing in Poland are also reflected in the data concerning poverty. Since the citizens cannot afford to heat their place of living, they choose the cheapest but also the least effective energy sources. This problem especially refers to rural areas where there is a bigger floor area per person than in cities, and this means the bigger area for heating. Additionally, people residing out of big agglomerations are frequently deprived of access to the gas network, therefore these persons are forced to utilize traditional energetic solutions, mainly burning anything possible with the mixture of the cheapest coal. It should be emphasized that access of rural population to gas is systematically increasing, but it is possible exclusively due to the distribution of gas in cylinders.

The phenomenon of energetic poverty is of an interdisciplinary and it also refers to a part of city dwellers.

8. Local partnership

One of essential elements of the development of rural areas is cooperation of inhabitants in rural areas with the local self-government. Building the social capital in rural areas takes place through local partnership. Local activity groups are an active entity of creating and implementing development in rural areas through the realization of various functions, whereas the number of persons with higher education has been increasing for many years, i.e. the human and intellectual capital has been developing, however, there is a problem with the social capital which is on the low level. The realization of local partnership contributes to many tasks realized, which results in the increase in an individual's awareness and possibilities of their influence in the given area, which develops potential of a given area and its inhabitants. The local self-government coordinates all actions undertaken in the area of the commune also those the direct effect of which is the local economic development. That is why one should make the local community more aware about the role of the authorities of the territorial self-government units from the commune to the voivodeship before the election to the local authorities.

CONCLUSION

It has become obvious that the leading objectives of current 5-year plans implemented in Turkey regarding social development such as rapid development of underdeveloped regions and accommodation of certain equilibrium between the usage and the allocation of economic resources assume even greater importance. To this end, investments in underdeveloped regions are significantly supported and they are in compliance with the European Union acquis in this context. Additionally, there have been significant increases in the number of organized industrial zones within recent years, and it is expected that this development would make a significant contribution to underdeveloped regions. On the other hand, despite the high rates of support, the largest private sector investments are located in the least supported regions. In this context, besides incentives, it is also important to provide more efficient access to less developed regions and trade ports.

Developmental problems of rural areas of Poland and Turkey at the regional and local level are similar, whereas owing to the national homogeneity in Poland, there are no ethnic problems. Other problematic issues exist in both countries, but there is a difference of the range of problems. It should be emphasized that Turkey has been trying to become a member of the EU for many years and it has gone through a lot of far-reaching developmental processes, however, Polish residents (especially the young) benefit from a lot of improvements resulting from the fact of being in the EU, and especially a possibility of work abroad, which decreases the potential of the state for the long period of time.

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The evaluation of performance of an audit committee in the system of financial control of local government units

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ABSTRACT

The aim of the article is to present the selected results of the author's own research related to the performance of an audit committee in local government units (LGU) in Poland. The research was conducted by means of a questionnaire which was sent electronically to all the LGUs in 2017. The method of deduction and induction was used, as well as the review of the scientific literature and legal acts. The results of the research are not too optimistic. It appears that the performance of an audit committee little contributes to the improvement of financial management of LGU. Respondents stated that the work of an audit committee had very little impact on the increase of effects of monies involved.

Keywords: *local government, financial control, irregularities, financial management, audit committee.*

INTRODUCTION

Financial management in local government units (LGU) is based on monies coming mainly from the local community. The public character of this specific management causes that at each stage of performance it is necessary to acquire rational assurance of legal, transparent and effective management of funds being at the disposal of local decisionmakers.

In the Polish legal and political system, in compliance with the principle of the separation of powers in the country, management and control are the functions performed by separate bodies (Chojna-Duch, 2003, p. 50). Within the area of finance, the legislator includes a regional audit chamber (Article 171 Section 2 of RP Constitution) and the Supreme Audit Office to the organs performing supervising activities and external control over the performance of a local government. The latter has the right to control the activities of a local government relating to the legality, cost-effectiveness and fairness, which is apparent from the wording of Article 203, section 2 of RP Constitution of 2 April 1997. It must be added that the principles of specific local government acts, while determining the competences of the LGU, mention also control activities. They are conducted by an audit committee obligatorily appointed for this purpose. The essence of this committee is not based exclusively on attesting the legality of processes relating to collecting revenues or budget expenditure but it must be broadly considered particularly in the context of planning, organising, motivating, i.e. the elements supporting the ongoing LGU management.

Taking into account the scope of tasks of an audit committee included in the provisions of the Public Finance Act of 27 August 2009 (i.e., Journal of Laws of 2017, item 2077), we can believe that its activity highly contributes to the improvement of management of LGU funds.

Due to the above pre-requisites, a research problem arises which was formed in a question: *Does the performance of an audit committee have an impact on the increase of effectiveness and effective performance of financial management in LGU?* On the basis of the research problem so defined, a hypothesis was formed according to which: *controlling by an audit committee may contribute to more*

effective management of LGU finance, but only when it will be performed in accordance with the principles of law and internal regulations.

Bearing in mind so formulated a research problem and the hypothesis set forth, the main aim of the paper is an attempt to present some selected results of a survey the object of which was the evaluation of performance of an audit committee in LGU. Besides, the author justifies that this paper was written because of there were numerous critical remarks formed in the report of the Supreme Audit Office after the control conducted in 2002, the topic of which was: "*Internal audit in Local Government Units*" (Information on the results of the Supreme Audit Office control ... 2002).

THE OBJECT OF FINANCIAL CONTROL IN PUBLIC FINANCE SECTOR

Financial control is a permanent element of the LGU management system since it participates actively in the process of planning and organising revenue collection, expenditure and management of municipal property. In order to meet its goals, it should be organized in a system in which the roles of each person engaged in their duties are clearly defined (compare: Winiarska (ed.) 2010, p.8). The concept of financial control is defined in the literature in various ways. From the praxeological point of view, there are two basic elements of human activity which determine the concept of control: to designate and perform, as well as other, such as to recognise, compare and explain relations between them (Kurowski, Ruśkowski, Sochacka – Krysiak, 2000, pp. 14-15). According to the banking and finance lexicon the term "*financial control*" is presented as "one of the measures aimed at reliable explanation of the compliance between the actual state and the state that applies in the area of finance" (Jaworski, 1991, p.182).

There are also works in which financial control is presented as a part of internal control system, related to the processes of collecting and distributing public funds and managing the property (Principles of implementing financial control system ... 2003, p. 4). The explanation of the term "financial control prepared by INTOSAI (*International Organisation of Supreme Audit Institution*) is also worth considering. According to their guidelines, financial control financial audit is an instrument of the internal audit system used to gain reasonable assurance that the aims of management have been achieved (Communication No. 13 of the Minister of Finance of 30 January 2006).

Moreover, in the opinion of some authors, financial control is an essential part of business control as it includes financial management as an integral element of economic processes (Kałużny, Zawadzka, 1999, p. 35). We must fully agree with this statement because here financial control is currently a permanent element of managerial control. A very general notion and aims of managerial control were presented by the legislator in the disposition of Article 68, section 1 and 2 of the Public Finance Act of 27 August 2009, emphasizing that the essence of this new legal norm in the sector of public finance is that decision makers take all actions to assure the realisation of aims and tasks. Thus viewed, managerial control is limited to taking actions to improve the management style – self-improvement of the entities of the public finance sector. It must be indicated that in the provisions of the previous Public Finance Act of 30 June 2005 (Journal of Laws of 2005, No. 249, item. 2104, as amended), financial control included:

1. preliminary assessment of the usefulness of undertaking financial obligations and spendings;
2. examining and comparing the factual state with the due state related to the processes of collecting and accumulating public funds, commitment and payment of expenditure from the public funds, awarding contracts and returning public funds.;
3. managing finance and applying procedures provided in section 2 (Public Finance Act of 2005 ... Article 47 section 2).

Besides many other areas which are the object of financial control, it can be assumed that the scope of this control in the self-governmental subsector, often includes:

- financial operations dynamically understood as transferring cash and statically understood as the resources of cash held/stored;

- cash inflows and outflows and tangible operations related to them (purchasing, using, selling materials, tools, machinery, buildings etc), as well as the outcomes of these operations (Winiarska (ed.) 2010, p.18).

Financial control, an essential component of the managerial control system, should be effective. The problem of control effectiveness should be justified not only by revealing various types of dysfunctions, waste or cases of financial fraud but, first of all, by indicating solutions, also organisational ones, which will improve functioning of examined areas. Also careful monitoring of correct settling transactions between organisational units (budgetary units, local government subsidiary plants or entities with a status of cultural institution) and a local government budget lies within the scope of financial control of a local government. Financial control is realised at various operational levels, offering the ongoing support to LGU management. Its efficiency requires commitment of not only unit managers but also people performing other tasks. First of all, it includes the LGU Treasurer and employees working in internal auditing. In selected entities an independent instrument of internal audit has an impact on the effectiveness of financial/managerial control. An active audit committee which focuses on examining the areas of financial management plays a significant role in assuring the optimal performance of LGU.

ORGANISATION AND IMPORTANCE OF AN AUDIT COMMITTEE IN LGU PERFORMANCE

The audit committee is created obligatorily by the managing authority. It is responsible only to this authority. The fundamental aim of the committee is to conduct comprehensive control and evaluation of LGU management. Moreover, the audit committee is authorized to conduct the control of LGU organizational units and subsidiary units on behalf of the representative body.

In order to assure full objectivity of the control process and to form recommendations, the legislator decided that an audit committee is composed of the local council members, including the representatives of all the clubs (Commune Self-Government Act Article 18, section 2). However, a person acting as chairman or vice-chairman of the managing authority cannot be the committee member. The number of audit committee members is not limited by the provisions of law. While deciding on the number of audit committee members, it is worth considering the amount of the budget item on the revenue side and the amount of planned budgetary expenditure. Also the number of organizational units reporting to LGU is an important argument to be accounted for. It is also worth considering how effective the activity of internal audit is if this instrument functions in LGU¹.

It is the Committee Chairman or, in the event of his absence, his Deputy, who manages the work of the committee. The audit committee carries out control activities on the basis of the work plan accepted by the Council or on the basis of ad hoc controls commissioned by the managing authority, and not included in the plan (Dylewski 2009, p. 85). Audit committee members may conduct the following controls:

- complex control, encompassing the whole area (entity) to be examined;
- problem control, focusing only on selected issues of the area;
- follow-up control, checking whether the results of the previous control have been implemented;
- ad hoc control, aimed at quick clarification of a given problem.

In a commune self-government the mode and scope of operation of an audit committee are ruled by the statute, whereas the principles of operation of other committees may be defined in separate decisions (Commune Self-Government Act...Article 18a section 5). However, in Voivodeship and County self-government the works of all the committees must be ruled in the statute (Commune Self-Government Act...Article 19). The detailed work mode of an audit

¹ Pursuant to Article 274, section 3 of the Public Finance Act of 2009 r. – an internal audit is conducted in LGU if the amount of revenue or expenditure and outflows included in the LGU budget decision exceed 40,000 thousand PLN.

committee is ruled by the LGU statute or the regulation of an audit committee. Rigorous observance of the principles of these regulations causes that the control process (stages) allows for the acquisition of reliable results, as well as sending updated reliable information which is essential to take management decisions.

The detailed scope of tasks to be carried out by audit committee members is ruled by the provisions of specific self-government acts. Thus, in case of a commune self-government, the competences of an audit committee stem from the content of Article 18 of the Commune Self-Government Act of 8 March 1990 (i.e., Journal of Laws of 2016, item 446), in case of county self-government – from Article 16, section 1 of the County Self-Government Act of 5 June 1998 (i.e., Journal of Laws of 2016, item 814), while Article 30, section 1 of the Voivodeship Self-Government Act of 5 June 1998 (i.e., Journal of Laws of 2016, item 486) regulates the issues of an audit committee in a voivodeship. Control actions of audit committee members are to determine whether:

- the unit operates in accordance with the law (criterion of legality);
- actions undertaken lead to the realisation of tasks by the unit (criterion of purpose);
- control is conducted in a reliable way (criterion of reliability);
- cost-effectiveness is maintained in LGU property management (criterion of cost-effectiveness) (compare: Mackiewicz, Malinowska – Misiąg, Misiąg, Tomalak, 2007 p. 225).

It must be emphasized that, beside control activities, the tasks of an audit committee also include opinions on LGU budget implementation and, then, application to the LGU decision-making authority to grant or refuse discharge to the head of commune (mayor, president of a city, head of county board, head of voivodeship board).

RESEARCH METHOD

In order to recognize, and then evaluate, the performance of an audit committee in LGU, research was conducted by means of a questionnaire. It was prepared electronically and emailed to all the LGUs in Poland in the second half of 2017. The percentage of LGU taking part in the research (i.e., after receiving feedback questionnaires) was as follows: self-government voivodeship 81.3%, county 14.3%, town with county status 21.2%, urban commune 19%, urban-rural commune 12.5%, rural commune 13.7%. The time of the survey was from 1 January 2010 to 30 November 2017. Calculations were done in IBM SPSS. $p < 0,05$ was adopted as statistical validity. The questions of the questionnaire were prepared by the author. While forming the questions, current legal regulations were accounted for, particularly the provisions of Chapter 5 of the Public Finance Act of 2009 – “*the mode of approving implementation of the LGU budget*”, selected norms of selected self-government acts, as well as (Information about the audit results of Supreme Audit Office ... 2002.). The questionnaire was divided into an index consisting of 8 questions, while in the other part of the questionnaire, there were 42 questions concerning the issues related to five elements of managerial control, including the problems of organisation and performance of an audit committee in a LGU. The questions were formulated by author of the research. Due to the size limitations of the paper, rest of the research was not included, but in the next papers it will be published.

The article discusses, among others, the audit effectiveness and its efficiency. It is shown whether the functioning of the audit affects the disclosure of phanage frauds. The indicated period of the study is only information for the electorate since from 1 January 2010, the law of extortion in management units of the public finance sector came into force.

The completion of such a research aim required also the review of literature, particularly in the field of public finance, self-government finance, management in the local government, as well as its critical analysis. It was also necessary to use some regulations in the area of financial law and guidelines of government bodies. Deduction and induction methods were also applied. In order to examine organisational conditions, usefulness and effectiveness of an audit committee, respondents were asked the following questions:

- How do you assess the performance of an audit committee in LGU?
- What was the object of control of audit committee members in the last budgetary year?
- Did the performance of an audit committee improve cost-effectiveness ?

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- Did the performance of an audit committee contribute to revealing financial fraud, bribery and corruption?

EVALUATION OF EMPIRICAL RESEARCH RESULTS

Achieving the objective of the paper required current data about an organisation, its activity and the usefulness of the audit committee in the LGU management process. The opinions acquired come from respondents who cooperate with audit committee members on a day-to-day basis, i.e., treasurers (chief budget accountants), institution secretaries, internal auditors, as well as people who deal with the problems of managerial control in LGUs.

The first question asked to the respondents referred to the general evaluation of an audit committee performance. It should be emphasized that the legislator indicated concrete tasks which a committee should complete in the LGU financial control system.

The analysis of the results revealed a disturbing image of audit committee performance. It turned out that almost half of the respondents (48.2%) assessed the performance of the audit committee as very low. There may be quite a lot of reasons of such a state. We can suppose that this assessment results, first of all, from insufficient competencies and experience of audit committee members to do the duties imposed by the legislator². The performance of an audit committee was assessed as moderate by over one fifth (20.2%) of the respondents. It lets us confirm the previous conclusion about the usefulness of a committee in conducting financial control in LGU. Only (8%) of the respondents assessed highly the control of LGU functioning and decisions taken by local decisionmakers.

Detailed figures showing the assessment of LGU audit committees are presented in Table 1.

Table 1. How do you assess the performance of an audit committee in LGU?

Source: prepared by the author on the basis of the survey.

| Description | frequency | % | % of vaild |
|--------------|-----------|-------|------------|
| Very low | 55 | 13.5 | 48.2 |
| Rather low | 18 | 4.4 | 15.8 |
| Moderate | 23 | 5.7 | 20.2 |
| Quite high | 9 | 2.2 | 7.9 |
| Very high | 9 | 2.2 | 7.9 |
| Total | 114 | 28.0 | 100.0 |
| No answer | 293 | 72.0 | - |
| Total | 407 | 100.0 | - |

As mentioned earlier, an audit committee performs its tasks on the basis of a work (control) plan. First of all, a good plan should include the areas adopted to control which are important from the point of view of LGU tasks and aims. The problems of control adopted to be carried out by audit committee members also has an impact on the quality and effectiveness of control mechanisms within the concept of managerial control, the essence of which is limited to diagnosing gaps and other weaknesses so that self-improvement actions may be undertaken.

Therefore, the respondents were asked about ane object of control performed by audit committee members. It appears that most frequent controls (29.5%) were related to the area connected with the implementation of selected items of the self-government budget. Such answers are not surprising

² Pursuant to Article 270, section 2 of Public Finance Act of 2009 – An audit committee of the LGU managing authority reviews financial statements and budget reports.

since audit committee members give their opinion on budget implementation for a discharge procedure. It required earlier detailed verification of a budget item and correlating the results with proper budget reports, other plans, e.g., Multiannual Financial Forecast, as well as the entries in the accounting records. As the second part (20.0%), the respondents mentioned the problems of completing municipal investment projects. The survey showed that equally frequently an audit committee was interested in observing procedures of granting and properly using budget allocations (13,6%). This result is not surprising as the area of planning, granting and settling budget allocations bears high risk of irregularities which, consequently, may result in sanctions for the breach of public finance discipline. The actions of audit committee members in this area may contribute to reinforcing and improving control mechanisms, which may have a significant impact on decreasing the risk of dysfunctions.

The same percentage of respondents (13.6%) admitted that organisational issues were the object of control. Rarely (2.2%) did audit committee members deal with the issues of confronting assets and liabilities as at the balance sheet date. This is worrying, at least due to the fact that one of the fundamental aims of an inventory process is to gain reliable information about the actual state of assets and account the people financially responsible for these assets. The inventory is a detailed control of management effectiveness – property protection. Therefore, its results should be thoroughly analysed during the review of the financial report for opinion purposes in the municipal discharge procedure.

Table 2 shows detailed figures informing about the object of controls completed.

Table 2. What was the object of control of audit committee members in the last budgetary year?

Source: prepared by the author on the basis of the survey.

| Description | Answers | | % of observation |
|---|----------------------------|--------|------------------|
| | N (number of observations) | % | |
| Legality of awarding public procurement contracts | 107 | 13.2% | 35.1% |
| Organizational issues | 110 | 13.6% | 36.1% |
| Procedure of granting and properly implementing allocations | 110 | 13.6% | 36.1% |
| Implementation of selected LGU budget items | 239 | 29.5% | 78.4% |
| Debt collection | 64 | 7.9% | 21.0% |
| Reliability of conducting and settling inventory | 18 | 2.2% | 5.9% |
| Implementation of municipal investment projects | 162 | 20.0% | 53.1% |
| Total | 810 | 100.0% | 265.6% |

The next question of the questionnaire referred to the assessment of the effects of work of audit committee members, namely, whether the activity of the committee contributed to increased cost-effectiveness of the monies used. The problem of cost-effectiveness of public expenditure is indicated by S. Owsiak (2013, pp. 244-245), who emphasised that *“the specific way of collecting public funds, as well as the administrative way of their allocation, creates a problem of their rational use. Solving this problem is even more difficult because the areas for which the expenditure is borne, are susceptible to using precise instruments of measuring the effects of this expenditure”*. In short, the performance of every control, regardless of the institution conducting it or its type, should bring the add value to the controlled entity or area. Bearing in mind suitable knowledge of

audit committee members of the specific operations of LGU, including macroeconomic, financial or sociological and cultural conditions, it seems reasonable to form a thesis according to which the only independent and internal instrument measuring cost-effectiveness of budget expenditure may be an audit committee, but only when its work is conducted pursuant to legal and internal regulations.

The result analysis shows a distressing picture. It appears that the respondents think that an audit committee very little committed to the increase in cost-effectiveness of monies used. This state is confirmed by the results of the responses (33%). The opinion that the work of the committee moderately committed to it, also seems not very optimistic as the result amounts to (31,2%). It is worth noting that a very small number of respondents (3,5%) confirmed high usefulness of an audit committee in expenditure rationalisation.

Detailed figures informing about the role of an audit committee in the increase of cost-effectiveness of monies used are presented in Table 3.

Table 3. Did the performance of an audit committee improve cost-effectiveness?

Source: prepared by the author on the basis of the survey.

| Description | Frequency | % | % of valid |
|--------------|-----------|-------|------------|
| Very low | 105 | 25.8 | 33.1 |
| Rather low | 82 | 20.1 | 25.9 |
| Moderate | 99 | 24.3 | 31.2 |
| Quite high | 20 | 4.9 | 6.3 |
| Very high | 11 | 2.7 | 3.5 |
| Total | 317 | 77.9 | 100.0 |
| No answer | 90 | 22.1 | - |
| Total | 407 | 100.0 | - |

Table 4. Did the performance of an audit committee contribute to revealing financial fraud, bribery and corruption?

Source: prepared by the author on the basis of the survey.

| Description | Frequency | % | % of valid |
|--------------|-----------|-------|------------|
| Very low | 188 | 46,2 | 61,2 |
| Rather low | 41 | 10,1 | 13,4 |
| Moderate | 59 | 14,5 | 19,2 |
| Quite high | 9 | 2,2 | 2,9 |
| Very high | 10 | 2,5 | 3,3 |
| Total | 307 | 75,4 | 100,0 |
| No answer | 100 | 24,6 | - |
| Total | 407 | 100,0 | - |

The answers to the question referring to the efficiency of audit committee members in revealing financial fraud, bribery and corruption, just like in the previous question, are not optimistic. Identifying characteristics of financial fraud in LGU activities is at a very low level. This is confirmed by the answers (61,2%). It may mean that in financial management there were actually no such dysfunctions or that committee members had no sufficient knowledge and experience to identify them. A limited number of results (3,3%) confirm that corruption, financial fraud or bribery were revealed. On the basis of the responses, a general conclusion can be drawn that controls conducted by audit committees do not contribute to revealing such offences as financial fraud, bribery or corruption in LGU operations.

The detailed figures informing about the contribution of an audit committee in revealing fraud, bribery or corruption are presented in Table 4.

CONCLUSIONS

The considerations carried out present selected results of the author's research, the subject of which was the evaluation of an audit committee performance in the system of LGU financial control. On the basis of the results acquired it can be indicated that in the opinions of the majority of respondents the audit committee performance in improving financial management was assessed as low. It can be indicated that the reason of this state is the lack of proper knowledge of audit committee members in the field of finance and accounting, as well as insufficient experience in conducting control action in public organisations. It can be concluded from the research that controls undertaken by an audit committee focused on the implementation of selected budget items, as well as investment issues. The answers provided by the respondents support the thesis that the controls undertaken are not very diversified. The results which are worrying inform about the poor work of audit committees in the context of increasing cost-effectiveness. Similarly, the respondents assessed as low the usefulness of committee work in the identification of offences.

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Inclusive growth in the European Union – challenges and prospects

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ABSTRACT

The aim of the paper is to analyze inclusiveness in Europe, present a snapshot of the current situation and assess longer term trends in terms of inclusive growth in European economies and societies. The paper is based on a literature review and data analysis. Ward's classification was performed to compare the progress made by Member States towards their national targets related to inclusive growth. The research methods applied allowed to assess the strengths and weaknesses of Member States and the European Union itself in achieving inclusive growth objectives. EU countries face social challenges and European economies are diverging in terms of social dynamics. In 2010, the European Commission placed inclusive growth at the heart of its economic, employment and social agenda — the Europe 2020 strategy and set ambitious targets to obtain it. The analysis show that since 2008, substantial progress has been made in the area of education where the EU is within reaching distance of both headline targets, while meeting the employment and poverty targets will remain challenging. There are also big differences in the progress made by Member States towards their national targets. Tackling poverty and social exclusion is among the most pressing challenges, yet poorly addressed, and the growth of poverty and inequality can further threaten the European social model.

Keywords: *inclusive growth, Europe 2020 strategy, European social model.*

INTRODUCTION

In the debate on economic growth and development, the focus is shifted from the material factors to those related to the human individual (human capital), innovation or dependencies occurring between economic entities (institutions, social capital). The concept of sustainable development is an attempt to counter the materialistic concept of prosperity resulting from the continuous economic growth. Sustainable development must be balanced, that is, there must be a balance between the three types of capital: economic, human and natural, between economic and social goals, and environmental quality. The attempt to oppose the growing socio-economic inequalities caused the emergence of yet another paradigm – inclusive development. However, one, universally applicable definition of inclusive growth and development has not been developed so far.

OECD (2014) defines inclusive growth as: “economic growth that creates opportunity for all segments of the population and distributes the dividends of increased prosperity, both in monetary and non-monetary terms, fairly across society”. Inclusive growth goes beyond one-dimensional GDP growth. Employment prospects, skills, educational opportunities, health, the environment and active participation in the economy and society also matter. However one defines it, there is no bigger policy challenge preoccupying political leaders around the world than expanding social participation in the process and benefits of economic growth and integration.

The aim of the paper is to analyze inclusiveness in Europe, present a snapshot of the current situation (using selected indicators) and assess longer term trends in terms of growth and fairness in European economies and societies. The study covers the years 2008-2016 (2008 is the baseline year for monitoring the Europe 2020 strategy). The paper is based on a literature review

and data analysis. Ward’s classification was performed to compare the progress made by Member States towards their national targets related to inclusive growth. The research methods applied allowed to assess the strengths and weaknesses of Member States and the European Union itself in achieving inclusive growth objectives. The paper contributes to the existing publications on the implementation of EU social objectives (Kryk, 2017; Stec and Grzebyk, 2018) by placing them in the broader context of changes in the European social model.

INCLUSIVE GROWTH AS ONE OF THE PRIORITIES OF EUROPE 2020 STRATEGY

The literature about the impact of income inequality on long-term growth is mixed, but there is growing evidence that excessive inequalities have a negative impact on human capital accumulation, and this determines their inhibitory effects on economic growth (Malinowski, 2016). Moreover, if economic growth is not able to stop the process of stratification of the population in terms of financial standing, it cannot guarantee the implementation of such important development goals as: universal access to economic benefits, reduction of the poverty, improving the standard of living. High inequalities also have consequences for the political stability and social cohesion necessary for sustainable development. Hence, reducing inequalities has become a major concern of development policy, a problem that has generated interest in inclusive growth (Stiglitz, 2016).

The subject of inclusive growth is taken by many international institutions and organizations that prepare reports, develop strategies and action plans for its implementation and set the goals to be achieved to bring its realization. Among them are: the International Monetary Fund, the Organization for Economic Cooperation and Development, the United Nations and the World Bank, which jointly initiated the project called the Millennium Development Goals (IMF, OECD, UN, WBG, 2000), International Policy Center for Inclusive Growth, conducting research in the field of inclusive development, Asian Development Bank and the European Union. The common elements of these strategies, reports and documents as well as the definitions of inclusive growth can be reduced to the commitment to improving the situation of people in the worst situation, creating conditions to improve their position and reducing barriers to improving their living conditions.

The European Union’s social problems are generally different from social problems in other parts of the world. The EU’s levels of inequality and absolute poverty are low in a global context. Nevertheless EU countries face social challenges and European economies are diverging in terms of social dynamics. Social indicators show that polarization between the south and the north has widened since 2008 (Darvas and Wolff, 2016). The changes in the economic and social landscape across the Union since the end of the twentieth century has been the main driver for major policy redirection as regards labour market, social inclusion and education policies at both EU and Member State level. The policy discourse with regard to labour market policies and their rationale has changed from a focus on flexibility and security of employment aspects to the need to maintain employment and limit the peaking social disparities and social exclusion. The European social model combines economic dynamism with social justice.

Therefore, inclusive growth is a top priority in the European Union’s overall strategy. In 2010, the European Commission placed it at the heart of its economic, employment and social agenda — the Europe 2020 strategy. There are three key drivers for growth, to be implemented through concrete actions at EU and national levels: smart growth, sustainable growth and inclusive growth. Building on the Lisbon Agenda, it incorporated a new social dimension to the blueprint for EU growth and the Union has set itself ambitious targets on inclusive growth. All EU member states shall, among others, strive for an the employment rate of 75 percent for people aged 20 to 64 by 2020; for a school drop-out rate of less than 10 percent; for a rate of at least 40 percent with a tertiary academic degree related to the 30 to 34 age cohort. Last, but not least – and this goes clearly to the heart of the inclusion goal – 20 million people shall not be any more under the risk of poverty (European Commission, 2010). The reduction of poverty risk is targeted in three dimensions: first, to the income poverty risk, i.e. the risk of earning less than 60 percent of the median; second, the

risk of severe material deprivation, i.e. the inability to afford some items necessary to lead an adequate life; third, the risk of people aged 0 to 54 living in a household of low employment intensity (Frazer et al., 2010).

The priority areas of the Europe 2020 strategy should better fit the idea of sustainable development (which is the supreme treaty principle of the Union's development) based on three pillars: economic, social and environmental. The difficulties in optimizing all three aspects for present and future generations has led to the rise of concepts that embody dualities of this trinity (Figure 1) - green economy/growth (which combines the environment with the economy), green society (which combines the environment with social goals), inclusive growth (which combines growth with social aspects) and inclusive development (which focuses on social and ecological aspects) (Gupta and Baud, 2015).

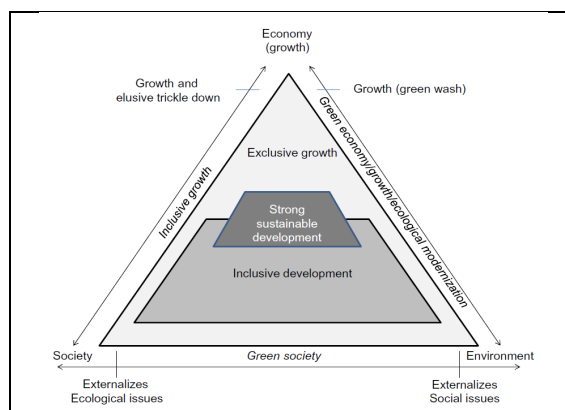


Figure 1: The relationship between inclusive development and sustainable development

Source: Gupta and Vegelin, 2016, p. 435.

Ianchovichina and Lundström (2009) emphasise that the main instrument of sustainable and inclusive growth is productive employment, reached through employment growth (new jobs, wages and self-employment) and productivity growth, which has the potential to lift the wages of the employed and the incomes of the self-employed. Ranieri and Almeida Ramos (2013) also underline the concept of productive employment, as well as the difficulties in understanding the complex interactions between growth, poverty and inequality. Growth is considered inclusive if it creates opportunities for all segments of the population and shares them fairly. There are two categories of inequality which are central to discussions of inclusive growth: inequality of opportunity (in access to education, jobs, finance or the judicial system) and inequality of outcomes (such as income, wealth, health and educational attainment).

INCLUSIVENESS IN THE EUROPEAN UNION

There is no indicator of income inequality for the EU as whole from official statistical sources. Darvas and Wolff (2016) have estimated the EU-wide Gini coefficient and other relevant indicators and have shown marked differences in the development of inequality between the European Union and most other parts of the world, including the United States and emerging countries. In many parts of the world, income inequality increased in the past two decades, but Europe was different. Since 1994, there was a steady decline in net (after taxes and transfers) inequality in the EU until 2008, after which inequality remained broadly the same.

But the latest figures on poverty in the EU are not so optimistic. Not only has the EU failed to move any closer towards its Europe 2020 target of lifting 20 million people out of poverty by 2020, the number of people at risk of poverty or social exclusion in the EU has actually risen from

the 2008 base year¹ figure of 116.6 million to reach a total of 118.1 million in 2016 (Eurostat data). Progress towards the EU 2020 targets of inclusive growth is presented on table 1.

Table 1: Progress towards the EU 2020 targets of inclusive growth

Source: Eurostat.

| Topic | Indicator | 2008 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | Target |
|------------|---|-------|-------|-------|-------|-------|-------|-------|-----------------|
| Employment | Employment rate of population aged 20-64 (%) | 70.3 | 68.6 | 68.4 | 68.4 | 69.2 | 70.1 | 71.1 | 75.0 |
| | Early leavers from education and training, total (% of population aged 18–24) | 14.7 | 13.9 | 12.7 | 11.9 | 11.2 | 11.0 | 10.7 | <10.0 |
| Education | Tertiary educational attainment, total (% of population aged 30–34) | 31.1 | 33.8 | 36.0 | 37.1 | 37.9 | 38.7 | 39.1 | ≥40.0 |
| | People at risk of poverty or social exclusion, EU-27* (million people) | 116.2 | 116.6 | 122.5 | 121.6 | 120.9 | 119.1 | 118.1 | 96.2 |

* Due to data availability issues, the target is evaluated only for the EU-27.

Since 2008, substantial progress has been made in the area of education where the EU is within reaching distance of both headline targets, while meeting the employment and poverty targets will remain challenging. At the EU level and in most of the MS, the distance to EU targets on poverty and social exclusion is greater than in the previous years. Reducing economic inequality is among the most pressing challenges, yet poorly addressed. This is also the conclusion of the SIM Europe report (2016). The Social Inclusion Monitor Europe (SIM Europe) which is a social policy monitoring instrument for the EU-28, provides data to facilitate improvement of national and European policymaking on social inclusion through information, analysis and evaluation of policies. According to SIM Europe experts the EU-28 overall fails to rise to the most pressing future social challenges, but they point to strong efforts in parts of Europe and inadequate ones in others to catch up in terms of improving social inclusion.

¹ A large part of the main social indicators available in 2010, when the Europe 2020 Strategy was adopted, referred to 2008 data for the EU-27 as the most recent data available. This is why monitoring of progress towards Europe 2020 headline targets takes EU-27 data from 2008 as a baseline year.

Table 2: Indicators of inclusive growth in EU in 2008 and 2016.

Source: Eurostat.

| Member State | Labour market | | Education | | | | Poverty and social exclusion | |
|---------------------|---------------------|------|--------------------------|------|--|------|---|------|
| | Employment rate (%) | | School drop-out rate (%) | | Tertiary educational attainment, age group 30-34 (%) | | People at risk of poverty or social exclusion (%) | |
| | 2008 | 2016 | 2008 | 2016 | 2008 | 2016 | 2008 | 2016 |
| EU-28 | 70.3 | 71.1 | 14.7 | 10.7 | 31.1 | 39.1 | 23.7 | 23.5 |
| Belgium | 68.0 | 67.7 | 12.0 | 8.8 | 42.9 | 45.6 | 20.8 | 20.7 |
| Bulgaria | 70.7 | 67.7 | 14.8 | 13.8 | 27.3 | 33.8 | 44.8 | 40.4 |
| Czech Rep. | 72.4 | 76.7 | 5.6 | 6.6 | 15.4 | 32.8 | 15.3 | 13.3 |
| Denmark | 79.7 | 77.4 | 12.5 | 7.2 | 39.2 | 47.7 | 16.3 | 16.7 |
| Germany | 74.0 | 78.6 | 11.8 | 10.3 | 27.7 | 33.2 | 20.1 | 19.7 |
| Estonia | 77.1 | 76.6 | 14.0 | 10.9 | 34.4 | 45.4 | 21.8 | 24.4 |
| Ireland | 73.5 | 71.4 | 11.4 | 6.3 | 46.3 | 52.9 | 23.7 | 24.2 |
| Greece | 66.3 | 56.2 | 14.4 | 6.2 | 25.7 | 42.7 | 28.1 | 35.6 |
| Spain | 68.5 | 63.9 | 31.7 | 19.0 | 41.3 | 40.1 | 23.8 | 27.9 |
| France | 69.3 | 70.0 | 11.8 | 8.8 | 41.0 | 43.6 | 18.5 | 18.2 |
| Croatia | 64.9 | 61.4 | 4.4 | 2.8 | 18.5 | 29.3 | 31.1 | 27.9 |
| Italy | 62.9 | 61.6 | 19.6 | 13.8 | 19.2 | 26.2 | 25.5 | 30.0 |
| Cyprus | 76.5 | 68.7 | 13.7 | 7.6 | 47.1 | 53.4 | 23.3 | 27.7 |
| Latvia | 75.4 | 73.2 | 15.5 | 10.0 | 26.3 | 42.8 | 34.2 | 28.5 |
| Lithuania | 72.0 | 75.2 | 7.5 | 4.8 | 39.9 | 58.7 | 28.3 | 30.1 |
| Luxembourg | 68.8 | 70.7 | 13.4 | 5.5 | 39.8 | 54.6 | 15.5 | 19.8 |
| Hungary | 61.5 | 71.5 | 11.7 | 12.4 | 22.8 | 33.0 | 28.2 | 26.3 |
| Malta | 59.2 | 69.6 | 27.2 | 19.7 | 21.0 | 29.9 | 20.1 | 20.1 |
| Netherlands | 78.9 | 77.1 | 11.4 | 8.0 | 40.2 | 45.7 | 14.9 | 16.7 |
| Austria | 73.8 | 74.8 | 10.2 | 6.9 | 21.9 | 40.1 | 20.6 | 18.0 |
| Poland | 65.0 | 69.3 | 5.0 | 5.2 | 29.7 | 44.6 | 30.5 | 21.9 |
| Portugal | 73.1 | 70.6 | 34.9 | 14.0 | 21.6 | 34.6 | 26.0 | 25.1 |
| Romania | 64.4 | 66.3 | 15.9 | 18.5 | 16.0 | 25.6 | 44.2 | 38.8 |
| Slovenia | 73.0 | 70.1 | 5.1 | 4.9 | 30.9 | 44.2 | 18.5 | 18.4 |
| Slovakia | 68.8 | 69.8 | 6.0 | 7.4 | 15.8 | 31.5 | 20.6 | 18.1 |
| Finland | 75.8 | 73.4 | 9.8 | 7.9 | 45.7 | 46.1 | 17.4 | 16.6 |
| Sweden | 80.4 | 81.2 | 7.9 | 7.4 | 42.0 | 51.0 | 16.7 | 18.3 |
| United King. | 75.2 | 77.5 | 16.9 | 11.2 | 39.5 | 48.2 | 23.2 | 22.2 |

Member States have set national targets to help achieve the overall EU targets, and are reporting on them as part of their annual national reform programmes. The European Commission is

monitoring and implementing the strategy through a process known as the European Semester. Its main purpose is to strengthen economic policy co-ordination and ensure the coherence of the budgetary and economic policies of Member States with the Europe 2020 strategy. Selected indicators of inclusive growth in the EU Member States are presented on table 2.

Ward’s classification was performed to compare the progress made by Member States towards their national targets. At the beginning of analysis, the original value of each indicator was divided by the national target value, indicating the expected level of the in 2020. The classes obtained by means of this classification group the countries implementing the Europe 2020 strategy according to similarities in progress made. The greater the progress in a given category, the lower the number of the class to which the country was assigned. Table 3 presents a classification of 27 member states² in terms of inclusive growth advances. Analysis was performed for each variable separately.

Table 3: Classification of countries by progress in the degree of achievement of the major Europe 2020 objectives related to inclusive growth in the years 2008–2016

Source: own elaboration.

| grade | Employment rate | Early leavers from education and training | Tertiary educational attainment | Risk of poverty and social exclusion |
|-------|------------------------|---|---------------------------------|--------------------------------------|
| 1 | HU, MT | PT | CZ, LV, GR, AT | BG |
| 2 | CZ, PL, LT, DE | MT, GR, ES | LT, RO | LV, RO |
| 3 | RO, EE, LU, SK, AT, SE | LV, IE, CY | PL, PT, SI, HU, HR, SK | LT, PL |
| 4 | LV, BE, FR | DK, HR, LU | EE, IT, DK, SE, LU, MT | FR, CZ, HU, AT |
| 5 | BG, IE, FI, NL, DK, IT | DE, BE, EE, FR, NL, IT, LT, AT | DE, IE, NL, BG, CY | BE, IE |
| 6 | PT, SI, ES, HR | BG, FI, SI, SE | BE, FR, ES, FI | DK, PT, IT, ES, SI |
| 7 | GR, CY | HU, PL, SK, CZ, RO | – | NL, GR, CY, LU, MT |

The results presented above demonstrate that Hungary and Malta, followed by the Czech Republic, Lithuania, Germany and Poland, turned out to be the countries making the most progress in improving the employment rate. The worst in this respect were Greece and Cyprus. Regarding the participation of people with higher education in the 30-34-year age group, the Czech Republic, Latvia, Greece and Austria have proven to be the best performing countries. In most of the EU Member States the number of people at risk of poverty or social exclusion has risen since 2008, increasing the distance to their national targets. Given that the classification is based on changes in indicators rather than their absolute values, it should be noted that countries placed higher in this ranking are not necessarily closer to achieving the targets. Hence, the results of this classification should be considered together with the results of the analysis presented in the table 2. However, the analysis shows that the situation regarding progress in achieving goals varies from country to country.

² United Kingdom was not included in analysis, as it has not set national targets. Moreover, in the case of the risk of poverty or social exclusion indicator, only 21 countries were classified (those who set national targets).

CHALLENGES FOR INCLUSIVE GROWTH IN THE EUROPEAN UNION

The concept of inclusive development is not in doubt, but there are questions about the possibility of its implementation. Saad-Filho (2010) have critically assessed inclusive growth concept and demonstrated that it belongs squarely within the mainstream post-Washington Consensus tradition, and that the policy prescriptions associated with this tradition have been successful only exceptionally. Gupta, Pouw and Ros-Tonen (2015) point that inclusive development will only be brought about through genuine interactive governance that provides the instruments and creates the conditions for adaptive learning and the empowerment of marginalized people .

The EU has set itself social targets, but has few direct instruments to achieve them. Tax, social, education and labour policies are almost exclusively national competences and are under the direct control of national policymakers, who face a number of challenges. The EU can play a role in that policies by using its regulatory power in setting certain social standards. To ensure progress towards the Europe 2020 targets (also in the field of inclusive growth), a range of existing EU policies and instruments are used, including the single market, the EU budget and external policy tools. However, the analysis made by Van Lierop (2016) reveals the existence of a number of difficulties which hamper the effective use of that instruments for tackling poverty and social exclusion. For example, failure to consult with civil society organisations in programming, implementation and monitoring EU policies (especially cohesion one) can dangerously compromise the ability of Member States to identify the people and issues most in need of support, raising serious questions as to whether the planned EU funds measures can lead to any real improvement in the area of social exclusion. Moreover, the instruments used in the fight against poverty do not always lead to the desired effect (Łatuszyńska and Fate, 2016).

Inclusive growth is not just about ensuring income adequacy or economic security for different income groups. It is about improving a wide range of outcomes that matter for well-being such as employment prospects, job satisfaction, health and educational outcomes. Thus, inclusive growth is inseparable from the concept of the European social model. The social policy agenda reflects the transformation and transition from an approach based on the minimization of the negative social consequences resulted from the structural change, to an approach which is based and centered on quality and aims at modernizing the social system and investing in people (Cechin-Crista et al., 2013). Therefore, in seeking to make growth more inclusive, governments should focus on the following broad policy areas (OECD, 2017): ensuring broad access to quality education and upskilling; increasing the quantity and the quality of jobs and addressing labour market insecurity and segmentation; enhancing the effectiveness of taxes and transfer systems in reducing income inequality and poverty.

Schmid (2014) argues that the possible future role of the European social model could consist of the implementation of four strategies: investive social transfers to strengthen the inclusive function and stabilisation impact of national unemployment insurance systems; protected flexibility, in particular the promotion of an internal functional flexibility through work sharing; investing in people, in particular by strengthening dual learning systems and by inducing mobility chains; efficient labour market regulation for better utilising existing capacities and restraining inefficient forms of flexibility.

CONCLUSIONS

To conclude, inclusive growth should be at the top of the political agenda. European countries are performing rather well in terms of achieving EU 2020 targets, though developments vary in different EU states. Tackling poverty and social exclusion is among the most pressing challenges, yet poorly addressed. The structural reforms and exploiting synergies among policy domains can address issues of inclusiveness, ensuring that the benefits of sustained growth are shared equitably. It is important for the EU to make the inclusive growth a prescription not just an aspiration and to turn inclusiveness into a driver of strong economic performance. Otherwise, the growth of poverty and inequality will further threaten the European social model.

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Impact of political risk on internationalisation of SMEs

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ABSTRACT

Internationalisation is no longer the domain of large enterprises and corporations, but has become an opportunity for SMEs to revive their activity in foreign markets. However, the directions of expansion are associated with a variety of risks non-existent in the domestic market. The aim of this paper is to present an analysis and an opinion of the attitudes of entrepreneurs to SME internationalisation in the context of political risk, including an indication of the geography of threats, directions of expansion, and preferred models of activity in foreign markets.

The findings are based on a group administered questionnaire among 312 respondents from various industries in Poland in 2017. The research focused on preferences regarding the directions of geographic expansion in correlation with diverse internationalisation models, and opinions on markets presenting the highest political risk. The respondents showed awareness of risks related to geographic expansion, indicating political factors as the key source, which was mostly assessed through international conflicts and hostilities discussed in the media (TV, radio, and internet).

The research contains unique data on entrepreneurial attitudes to internationalisation. The observations allow formulation of conclusions about awareness of entrepreneurs, who acquire knowledge and create opinions about foreign economies based mainly on media information.

Keywords: *internationalisation, directions of internationalisation, risk, SME*

INTRODUCTION

Business expansion into new geographic markets creates the opportunity for growth and value creation. The implementation of such a strategy involves many unique challenges (Lu & Beamish, 2001, p. 566). Often, the knowledge acquired in the local market is insufficient to operate in foreign markets. Some companies choose international markets as a way to reduce dependence on uncertain domestic markets, accepting that failure of the internationalisation process can jeopardise their survival (Sapienza et al., 2006, pp. 914-933). Starting and running a business in foreign markets is usually a serious challenge for SMEs, notably for their owners, given that they need to make risk-laden decisions (Małeczka, 2016, pp. 91-122). In this respect, it is reasonable to scan the foreign environment to identify any determinable impediments and threats to the internationalisation processes so that strategies and adequate solutions can be developed. According to R. Hölscher, the threat of non-generation of the intended profit as a result of having incomplete information is a definition of risk which the authors adopted as the most relevant to the issues presented in the article (Hölscher, 1987, pp. 17-36).

METHODOLOGY

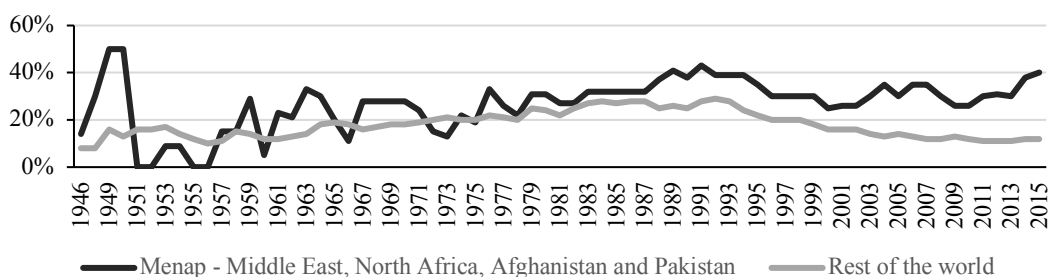
The research on the internationalisation of SMEs was carried out in January and February 2017. The study covered 312 respondents from Poland (50% women and 50% men) carrying on their own business or planning to start their own enterprise in the future. The respondents had diverse experience in the internationalisation of enterprises. The survey was conducted using a group administered questionnaire. In addition to respondent information, the questionnaire included qualitative (16) and quantitative (3) questions. There were 3 open-ended and 12 closed-ended questions, where the respondents had to choose one of the answers, or answer on the five-level Likert scale. Not all respondents answered all questions, therefore the sample size may vary in relation to each criterion analysed. The survey concerned the preferred models and directions of internationalisation, as well as identification of regions considered to be unsafe for business due to political risks. An assessment of the respondents’ attitudes and the results of the research were compared with other results published by independent organisations involved in the ranking of economies and ease of doing business in a particular country. Mathematical analysis tools were applied to the results to determine the percentages and correlations and to build contingency tables regarding the issues examined.

EXTERNAL SOURCES OF RISK IN GEOGRAPHIC EXPANSION – SELECTED ASPECTS

Investigating economic risk should enable managers to make adequate decisions and, consequently, reduce losses and stay on course with their goals. In a fast-changing economic environment, the time to acquire information is reduced to a minimum, which forces managers to make decisions based on their current knowledge in the face of high ignorance about the whole internationalisation process (Figueira-de-Lemos et al., 2011, p. 143). The considerations regarding an enterprise’s foreign environment should encompass its political, legal, economic, social and cultural settings, as well as the associated constraints and threats. Due to the purpose of the research, which was to identify and assess the perception of SME internationalisation by entrepreneurs in the face of political threats related to the location of external markets, other settings were excluded from the observation.

Political environment

Political risk is related to the methods of government intervention in the entire economy or in its selected sectors. The signs of a long-term adverse, or changing, political environment include social unrest, internal divisions, embargoes and armed conflicts. The beginning of the 21st century saw a cumulation of events confronting societies and economies with political threats and challenges. The growing number of terrorist attacks and armed conflicts in the Middle East, tense political situation, deep nationalist sentiments caused by refugee migration, and intensification of the discussion on the unity of the European Union may lead to anxiety among entrepreneurs who have decided to go international. The reconfiguration of armed conflicts around the world is characterised by the involvement of non-state actors and the potential to produce significant transnational effects (Ruth & Perez, 2015, pp. 187-219) (Figure 1).



**Figure 1: Frequency of conflict by region
(Share of countries in conflict over total, by year)**

Source: Own material based on IMF Annual Report, 2016, p. 25

Unstable regional politics increase the susceptibility to conflict and constitute an additional source of risk for foreign investors (Solingen, 2001, p. 524). Civil conflicts and wars are more dangerous and more difficult to prevent than international military campaigns, also because of their frequency (Dai, 2011, p. 13). In Europe, politicians assumed that the development of the euro area and the introduction of a single currency could contribute to peace among countries (Lokar & Bajzikova, 2015, pp. 632-641). On the other hand, research conducted in 2013 in Xinjiang, the multi-ethnic regions of Western China, indicated a proportional relationship between the size of national income and the number of terrorist attacks in that area (Yin, 2017, pp. 41-66). Running a business in high-risk territories offers opportunities to take over the market from withdrawing companies and gain an advantage after the conflict ends, and enables the development of many industries previously unknown in the foreign market. Nonetheless, this requires the acceptance of a greater business risk and its effects. For SMEs, this is a particularly difficult challenge due to limited resources and possibilities of identifying the prevailing conditions and related threats. In the face of political unrest in conflict-affected areas, most companies prefer a risk avoidance strategy, choosing the safest solution, namely refraining from pursuing activities in such areas. In practice, however, this implies partial or total termination of internationalisation, or a change of strategy. In this regard, Kertzer's opinion, despite its originally military context, seems to be particularly useful in the area of economy. According to this author, when making a decision in the face of a terrorist threat, it is more important to oppose risky decisions rather than concentrate on acceptance or rejection of the risk (Kertzer, 2017, p. 118). In Beck's opinion, modern society has, paradoxically, become a risk society in the sense that it is increasingly occupied with debating, preventing and managing risks that it has produced itself (Beck, 2006, p. 332).

One of the key barriers in the geographic expansion of SMEs is the difficulty of accessing capital (Łuczka 2002, pp. 55-70; Małecka, 2016, pp. 91-122). Undoubtedly, an increase in the intensity of terrorism may cause its outflow to other countries – a reverse relationship has been observed between the level of terrorist threat and direct foreign investment (Abadie & Gardeazabal, 2008, pp. 1-27). This is corroborated by the authors' findings regarding the opinions and preferences of entrepreneurs in the context of political factors. Avoiding areas with a high terrorist threat may prove insufficient since terrorist organisations are also becoming global organisations. Suicide terrorist attacks are now occurring in areas previously unaffected by them (Falk & Kroitoru, 2008, p. 226). In economic terms, political risk is helpful in analysing investment risk, because comparing costs and benefits makes it often possible to distinguish specific political costs, albeit with blurred borders (Malnight, 2017, p. 27).

Gaining knowledge about the dangers present in the geographic regions of planned expansion and the associated risk is a key task for managers. In this regard, ratings of countries, or risk maps, developed by governmental or non-governmental organisations may be helpful. According to Control Risk, among the top five business threats in 2017, three directly concerned political factors. The list also includes the threat of terrorism (www.riskmap.controlrisk.com, June 20, 2017). Maps of global risk forecasts include assessment of political risk and its negative impact on enterprises (for example maps of terrorism and political risks prepared by Aon in cooperation with Roubini Global Economics and Risk Advisory Group).

Polish companies prefer foreign trade in EU markets, yet they are increasingly cooperating with non-EU countries. SMEs' share in international trade is much higher than that of large market operators for all the indicators examined (Małecka, 2017, pp. 1-13). According to L. Bussotti, assessment and management of political risk have been created and developed with the aim of calculating and reducing the risk of external investment by MNEs, completely ignoring the opinions and interests of local populations (Bussotti, 2014, p. 170). In various econometric models, the relative size of political indicators is directly related to the stability of the government. This means that changes in those

elements of political risk are relevant to the investment decisions of MNEs (Busse & Hefeker, 2005, p. 3).

PREFERRED MODELS, DIRECTIONS AND LOCATIONS OF INTERNATIONALISATION OF ENTERPRISES

Internationalisation of enterprises is associated with many risks that are not present at home. This is a specific challenge for SME owners who, faced with additional threats in little-known markets, decide, often solely on that basis, not to go international. With reference to the internationalisation-related political risk, the respondents were asked about their views on the choice of foreign business location. Having established the significance level = 0.05, the Pearson’s chi-squared test was carried out in order to investigate the relationship between qualitative changes (selection of the location of geographic expansion and preferred internationalisation models). A thesis was formulated: H_0 - variables are independent – the choice of location does not depend on gender. The results indicated p-value at 0.8258, which confirms the lack of dependence in the criteria examined – the choice of location does not depend on the gender of the respondents – therefore, there is no stochastic relationship in this case (Table 1). An analogical thesis concerning the relation between the choice of location and the internationalisation model showed p-value at 0.5911, therefore, on the basis of the non-parametric analysis carried out, it can be statistically confirmed that the selection is independent also as regards this criterion.

Table 1: Contingency table – preferred models and directions of internationalisation in face of political risk

Source: Own research

| Internationalisation model | Gender | Directions of operations | | | |
|----------------------------|--------|--------------------------|-------------------------|----------------------------|------------|
| | | In the EU | Europe (outside the EU) | Worldwide (outside Europe) | No opinion |
| Born global | Women | 18 | 2 | 10 | 5 |
| | | 11.5% | 1.3% | 6.4% | 3.2% |
| | Men | 46 | 4 | 22 | 17 |
| | | 29.5% | 2.6% | 14.1% | 10.9% |
| | All | 64 | 6 | 32 | 22 |
| | | 20.5% | 1.9% | 10.3% | 7.1% |
| Stage-by-stage | Women | 59 | 9 | 36 | 17 |
| | | 37.8% | 5.8% | 23.1% | 10.9% |
| | Men | 32 | 5 | 20 | 10 |
| | | 20.5% | 3.2% | 12.8% | 6.4% |
| | All | 91 | 14 | 56 | 27 |
| | | 29.2% | 4.5% | 17.9% | 8.7% |

In terms of the gender criterion, the results indicate differences in the preferences of the respondents (Figure 2). It was noticed that men (57.1%) were more likely to choose the riskier models than women (22.4%). This may indicate a greater propensity for taking risk by this group of respondents. Although staged models are the oldest and still important paradigm in the theory of internationalisation (Kasperkowiak, Małecka, Łuczka, 2017, pp. 390-403), similarities in the selection of foreign markets by respondents in favour of staged models and born global approaches were noticed. An in-depth analysis revealed that among those choosing stage-by-stage models, 48.4% would establish cooperation with at least one EU country. The proportion of the born global idea supporters is higher by just 3% (51.4%). The willingness to take the risk of internationalisation outside the EU was

reported by 7.3% of the surveyed supporters of stage-by-stage models and 5.3% of those in favour of the born global idea. In both groups, 29.8% and 25.2% of the respondents, respectively, would operate worldwide, regardless of the location and external conditions. Those who were uncertain about the business location represented 14.5% for stage-by-stage models and 18.1% for the born global model.

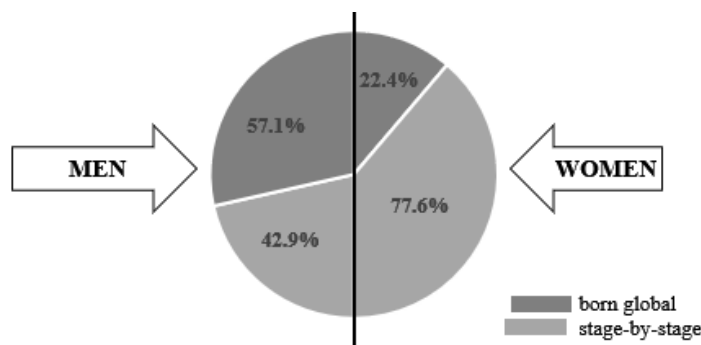


Figure 2: Choice of internationalisation models by gender

Source: Own research

Geography of political risk sources

When attempting to answer the question about the riskiest geographic regions for SME internationalisation, the respondents were asked to indicate countries which they thought were the most insecure for those processes (Table 2, part “A”). In order to compare the survey results with other economic assessments, the rating of Standard & Poor’s, a global rating agency, and the Doing Business¹ ranking (Table 2, part “B”), showing how easy it is to start a business, were added. The ranking reflects the ease of launching economic activities in a particular country, and, as a World Bank study, focuses on business regulations and their practical application from the perspective of small and medium-sized enterprises (Standard & Poor’s, February 20, 2017; Doing Business, January 18, 2018).

The respondents assigned the highest scores to the economies of Ukraine (18.0%) and Russia (15.3%). The moderate condition of those economies is confirmed by the speculative rating by Standard & Poor’s (B- and BB +), although the Doing Business ranking shows that operating there is not very difficult (20 and 26). Both countries are involved in political conflicts. In addition, Ukraine is struggling with an unstable government and the related social unrest. By analogy with a state’s problems with domestic politics, it can be assumed that this was the reason why respondents also indicated Turkey as another politically high-risk region.

The economy with Standard & Poor’s highest rating – Germany (AAA) – was assessed by the respondents as the riskiest in the EU. It should be noted, however, that in this case the risk may have

¹ Doing Business – a measure of the freedom of economic activity developed by the World Bank – a high Doing Business index suggests better and simpler rules for running a business and stronger protection of property by law. World Bank’s own research indicates a correlation between improvement of regulation and economic growth.

Table 2: Economies with the highest political risk of geographic expansion in internationalisation processes in comparison with the Standard & Poor’s rating and the Doing Business ranking

Source: Own research (A) based on Standard & Poor’s and Doing Business rankings (B)

| A | | | | B | | |
|---|--------------------------|--------------|-----------------------|-------------------|-------------|---------------------|
| Political risk in internalisation processes [%] | | | | Standard & Poor’s | | Doing Business |
| Continent | Region | Country | Respondents’ opinions | Rating | Perspective | Starting a business |
| Europe (55.8) | EU (12.6) | Germany | 3.8 | AAA | Stable | 114 |
| | | Greece | 2.7 | B- | Stable | 56 |
| | | France | 2.7 | AA | Stable | 27 |
| | | GB | 1.1 | AA | Negative | 16 |
| | | Italy | 1.1 | BBB- | Stable | 63 |
| | | Bulgaria | 0.5 | BB+ | Stable | 82 |
| | Romania | 0.5 | BBB- | Stable | 62 | |
| | Eastern Europe (43.2) | Ukraine | 18 | B- | Stable | 20 |
| | | Russia | 15.3 | BB+ | Positive | 26 |
| | | Turkey | 7.1 | BB | Negative | 79 |
| | | Belarus | 1.6 | B- | Stable | 31 |
| Georgia | | 1 | BB- | Stable | 8 | |
| Asia (36.1) | Middle East (29.0) | Syria | 10.9 | N/A | N/A | 68 |
| | | Iraq | 8.7 | B- | Stable | 172 |
| | | Saudi Arabia | 3.3 | A- | Stable | 147 |
| | | Iran | 3.3 | N/A | N/A | 102 |
| | | Israel | 2.7 | A+ | Stable | 41 |
| | Other countries (7.1) | China | 2.7 | AA- | Negative | 127 |
| | | North Korea | 2.2 | N/A | N/A | N/A |
| | | Afghanistan | 1.1 | N/A | N/A | 42 |
| | | Japan | 0.5 | A+ | Stable | 89 |
| Africa (5.5) | All (5.5) | Cambodia | 0.5 | N/A | N/A | 180 |
| | | Egypt | 2.2 | B- | Stable | 39 |
| | | Libya | 1.1 | N/A | N/A | 163 |
| | | Nigeria | 0.5 | B | Stable | 88 |
| | | South Africa | 0.5 | BB+ | Negative | 176 |
| | | Somalia | 0.5 | N/A | N/A | 184 |
| North America (1.6) | All (1.6) | Tunisia | 0.5 | BB- | Negative | 103 |
| | | Mexico | 1.1 | BBB+ | Negative | 93 |
| South America (1.0) | All (1.0) | USA | 0.5 | AA+ | Stable | 37 |
| | | Argentina | 0.5 | B | Stable | 157 |
| | | Colombia | 0.5 | BBB | Negative | 61 |

been equated with the problem of mass migration in that country. The Doing Business ranking, on the other hand, indicates that economy as relatively difficult to launch business operations (114). This example illustrates the discrepancies in the assessment of countries stemming from a different assessment criterion. Paradoxically, France, which, according to the Doing Business ranking, is a country where starting a business is easy (27), was indicated by the respondents as a potential source

of political risk. The reason for this, as in the case of the equally critically evaluated Greece, England and Italy, may be an analogy to emigration policy and the threat of terrorism in recent years. Importantly, the countries indicated by the respondents are among the strongest economies of the European Union, and are more often present in the mass media than other economies of the region. Economies were analysed in terms of the criterion of belonging to a given geographic area, as a result of which a map of regions was outlined identifying Eastern Europe (43.2%) and the Middle East (29.0%) as the highest-risk territories. In particular, Syria and Iraq (10.9% and 8.7%, respectively, with a B- rating) were prevailing in the respondents' answers. According to those surveyed, the least risky economies are located in South America (1.0%), and the riskiest in Europe (55.8%).

The research results indicate that the respondents focused on economies located in the vicinity of, or within a relatively short distance from, Poland. In relation to the potential directions of internationalisation, this may indicate an interest of entrepreneurs primarily in European countries.

The results of the authors' research once again prove that the respondents focus on political factors, armed conflicts and terrorism as the main determinants of risk in SME internationalisation.

CONCLUSIONS

The results of the authors' research have indicated that the respondents are aware of the threats ensuing from political actions, considered to be the prime risk sources in the internationalisation of enterprises. For the Middle East and for other European countries indicated by the respondents, they are the principal risk source (27.4% and 43.2%). According to those surveyed, North America (1.6%) is the most stable political region.

The respondents' opinions about risky areas for SME internationalisation mostly referred to the regions commonly discussed in the media, namely Ukraine, Syria, Egypt, and Afghanistan. Other conflict-affected regions, such as South Sudan, Pakistan, Somalia or the Gaza Strip, were not indicated by the respondents. The observation leads to conclusions about the awareness of entrepreneurs, who acquire knowledge and formulate opinions about foreign economies on the basis of publicly available information. For SMEs, it is sufficient information to avoid risk and refrain from engaging in internationalisation.

According to the authors, the preparation of objective reports on the condition of economies and the spread of knowledge about them can contribute to geographic expansion of enterprises and facilitate internationalisation, in particular for SMEs facing additional barriers.

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Key access factors available for startups entering the public procurement market in Poland

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ABSTRACT

The aim of the paper is to examine key access factors for startups entering the public procurement market in Poland. For this purpose, a questionnaire and a methodology of network thinking was used. In order to identify the most important factors that facilitate access to the aforementioned market, a point of view of entrepreneurs and contracting authorities was adopted. The study revealed that the most important factors include the following: innovativeness of tenders, acceptance of high risk by ordering authorities and pro-innovative descriptions of the subject of the contract. The result of the conducted study is a targeting model facilitating the access of startups to the public procurement market in Poland.

Keywords: *public procurement, startup, methodology of network thinking.*

INTRODUCTION

The conviction that only large companies recognizable on the market guarantee correct execution of public procurement often leads to the omission of smaller entities, including startups. This term is defined in literature and business practice in a variety of ways. The most widespread definition was created by Steve Blank, the co-author of the "Startup handbook," where he referred to it as a temporary organization looking for a profitable, scalable and repeatable business model (Blank, Dorf, 2013). Eric Ries, another author and entrepreneur popular among other aspiring entrepreneurs, in his book titled "Lean Startup," claims that it is an organization that creates products and services in conditions of extreme uncertainty (Ries, 2011). In turn, A. Damodaran uses the term "young company" indicating the need for market testing of its offer (Damodaran, 2009). Among numerous characteristics of startups he includes the following:

- the lack of history,
- low or no income, operating losses,
- dependence on foreign capital,
- a significant risk of failure.

Therefore, can startups participate in tender proceedings? Legal regulations do not block such a possibility in principle. According to the applicable regulations, the contracting authority may specify all the requirements related to innovativeness, so it is free to shape orders based on technological novelties.

According to the Startup Poland Foundation Report, 83% of Polish startups have not attempted any public procurement procedure even once. And regulations or behavior of the contracting authorities are not to blame here. Often, young, innovative companies themselves are not interested in such a

formula. Studies also show that about 60 percent of startups do not even plan to participate in such tenders (Beauchamp M., Kowalczyk A., & Skala A, 2017).

These facts indicate that it is worth undertaking research on factors that increase the access of startups to the public procurement market in Poland. In order to determine these factors, surveys were carried out among 30 companies operating in the form of startups. Subsequently, among 15 experts representing the contracting authorities the key factors for the access of the described companies to the procurement market were identified using the methodology of network thinking. The research was carried out in the second half of 2017 in Wielkopolska. The purposeful selection of respondents for the sample was supposed to ensure credibility and professionalism of responses.

RESEARCH ON KEY FACTORS AVAILABLE FOR STARTUPS TO ACCESS THE PUBLIC PROCUREMENT MARKET IN POLAND

30 entrepreneurs representing startups participated in the first part of the study. As mentioned above, the purpose of the questionnaire was to indicate those factors that were related to the access of these entities to the public procurement market. Among the respondents, the vast majority (87%) were university graduates, which would contradict the thesis that people setting up these types of business are inexperienced. People aged 30-39 dominated (60%), while those over 40 constituted the smallest number (17%). Women composed approximately 23% of people managing startups. The surveyed companies were mostly involved in selling technologies for marketing (20%), big data solutions (17%) and research tools (13%).

As many as 23 companies (77%) had never approached any tender procedures before. Fig. 1 presents the reasons for the lack of participation of these entities in the public procurement market.

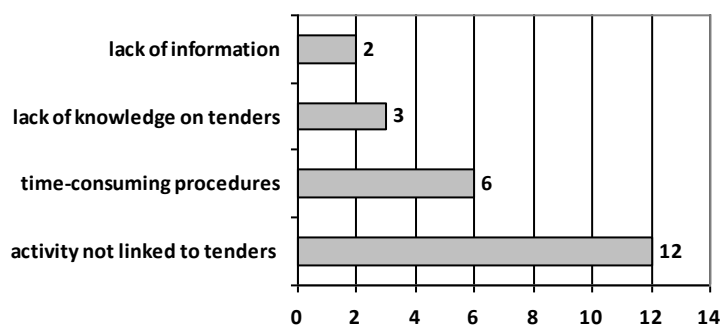


Figure 1: The reasons for non-participation of startups in the public procurement market

Analyzing the responses, it is hard not to resist the impression that the most common reason for the failure of startups in the public procurement market is the lack of knowledge of the owners about the applicable procedures and regulations. It is true that only 3 of the respondents indicated such a response, but the statement that their activity is not connected to public tenders, does not demonstrate the knowledge of public procurement law either.

The remaining 7 startups had participated at least once in public tender procedures. For 5 of them, public contracts accounted for about 25% of revenues, while only 2 declared that thanks to public orders they receive more than half of their income.

Among the factors related to accessing the public procurement market, the respondents most often mentioned the following: innovativeness of public orders, the possibility of subcontracting, using non-price offer evaluation criteria, applying the appropriate public procurement procedure, demand for technologically advanced products, high risk accepted by the ordering party, requirements regarding the conditions of participation in the procedure, description of the subject of the contract, the number of competitors, friendly law, financing possibilities and the amount of income resulting from the contract.

The obtained results of the survey have become an inspiration for further research based on the use of network thinking methodology and the identification of key factors conditioning access to the public procurement market in Poland. Therefore, active and critical factors have been identified as key factors (Ulrich, Probst, 1990). Active factors are these that strongly affect other elements, but they do not fall under any influence themselves, while the critical ones include these that also strongly influence other elements, but are subject to strong external influences.

15 experts representing contracting authorities took part in this part of the study. From the point of view of the methodology used in the study, such selection ensured the participation of professionals well familiarized with the procedures of awarding public contracts. Experts mainly included representatives of local government sector with at least several years of experience in the public procurement market. Their participation mainly boiled down to analyzing the interrelations of factors identified by the respondents in the first part of the study and determining the mutual strength of their impact. Due to the specificity of the study, the time factor related to the impact of individual factors in the network of links was omitted. Due to the adopted issues, it was assumed that the network center would contain a factor called *access of startups to public procurement*. The network of dependencies is shown in Fig. 2.

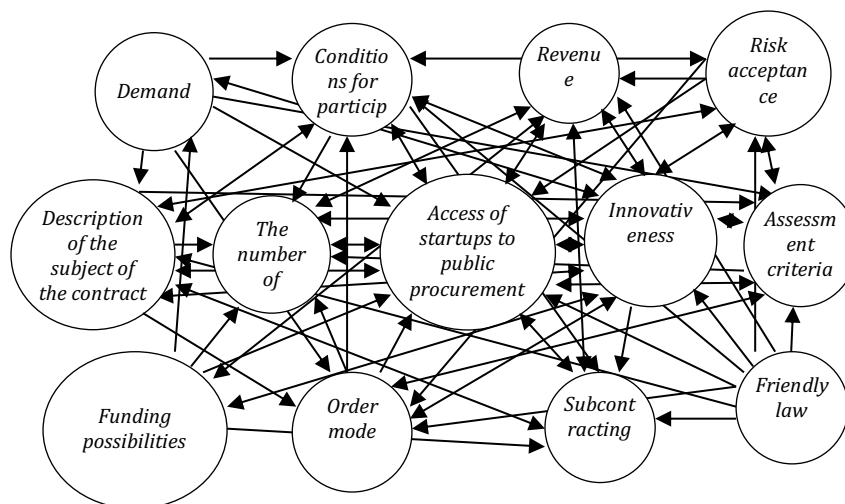


Figure 2: A network of dependencies affecting the access of startups to the public procurement market

After presenting the factors in a network of links, the interactions between them were analyzed in the following two sections: the type and the intensity of their interaction. There are the following two types of interactions: one-way interactions and opposing interactions. Determining the intensity of the impact was supported by the influence matrix shown in Table 1. It was also determined that the intensity would be determined on a four-point scale (0-3), where "0" means no impact, while "3" - a very intense impact. The analysis of the matrix is important for determining which of the

analyzed factors can be considered active and which critical. Apart from them, the network of dependencies affecting the access of startups to the public procurement market allows to determine the so-called passive factors (to a small extent they affect other factors while being subject to strong influences themselves) and lazy factors (which also slightly affect other factors without demonstrating any impact on their own operation).

Table 1. The matrix of influence

| No | Name of the factor | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | Sum of A |
|-----|--------------------------------------|----|----|----|----|---|---|---|----|----|----|----|----|----|----------|
| 1. | Access of startups to public tenders | X | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 8 |
| 2. | Innovativeness | 2 | X | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 0 | 1 | 3 | 27 |
| 3. | Subcontracting | 3 | 0 | X | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 7 |
| 4. | Assessment criteria | 3 | 2 | 0 | X | 2 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| 5. | Procurement mode | 3 | 2 | 0 | 2 | X | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 12 |
| 6. | Demand for technologies | 2 | 3 | 0 | 2 | 1 | X | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 13 |
| 7. | Risk acceptance | 2 | 3 | 0 | 1 | 1 | 0 | X | 3 | 2 | 0 | 0 | 0 | 2 | 14 |
| 8. | Conditions for participation | 3 | 3 | 2 | 0 | 0 | 0 | 2 | X | 1 | 2 | 0 | 0 | 0 | 13 |
| 9. | Description of tender | 2 | 3 | 2 | 2 | 1 | 0 | 1 | 2 | X | 3 | 0 | 0 | 0 | 16 |
| 10. | The number of competitors | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | X | 0 | 0 | 2 | 6 |
| 11. | Friendly law | 2 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | X | 0 | 2 | 11 |
| 12. | Funding possibilities | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | X | 3 | 8 |
| 13. | The amount of income | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | X | 7 |
| | Total P | 27 | 21 | 12 | 12 | 9 | 4 | 7 | 13 | 13 | 16 | 0 | 3 | 15 | x |

The nature of the factors and their affiliation to particular groups in the methodology of network thinking allowed identifying the intensity map presented in Fig. 3. As mentioned earlier, active and critical factors were identified as crucial due to their ability to introduce changes to the system.

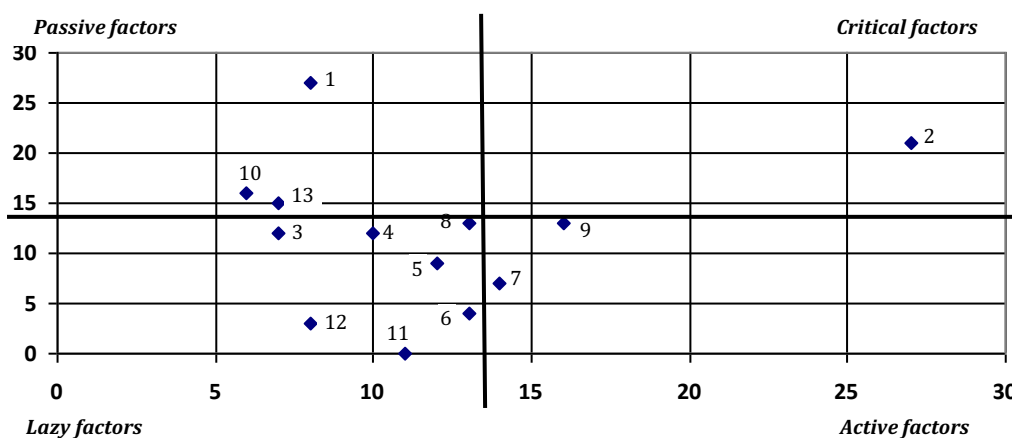


Figure 3: Intensity map

When creating the intensity map, it should be decided where to set the boundaries between the factors covered by the study. It was decided that these limits would arise as a result of dividing the maximum value of A and the maximum value of P by number 2. In this way, A = 13.5 and P = 13.5 were obtained.

The analysis of the intensity map shows that the key factors for the access of startups to the public procurement market in Poland are the following: tender innovativeness (2), acceptance of high risk by ordering authority (7) and description of the subject of the contract (9).

In the 1990s, Clayton Christensen stated that radical innovations that disrupt traditional economic mechanisms are very unlikely to arise in mature companies as well-established enterprises have too much to lose as a result of changes compared to the emerging ones (Christensen, 2010). The experience of developed countries also indicates that young innovative enterprises referred to as startups exert disproportionately larger impact on the economy and the environment in which they operate. Therefore, the role of entities administering public funds has been growing so that the tenders they organize are now as innovative as possible.

The amendment to the Public Procurement Law Act that took place in 2016 created wide opportunities for innovative enterprises, including startups, by introducing a solution of an innovative partner mode. The purpose of Innovative Partnership is to develop an innovative product, service or construction work not available on the market and to sell this innovative product, service or construction work, provided that they correspond to performance levels and maximum costs agreed between the contracting authority and the partners. The use of this mode should be preceded by an in-depth market analysis to determine whether there is a solution that meets the expectations of contracting authorities or whether there is a need for a new solution.

The available data (PPO, 2017) demonstrates however, that in 2016 Polish procurers did not carry out any proceedings in the mode of innovative partnership. This attitude of the public sector is a result of a necessity to act within a specific legal framework, and thus to avoid higher risk related to purchasing goods from smaller enterprises. The results of own research indicate the following barriers to the development of innovative public procurement (according to the procuring entities): financial ones, resulting from attitudes and knowledge of contracting parties, resulting from the lack of interest and knowledge of contractors, and resulting from law and activities performed by authorities (Borowiec, 2013).

Creating and running startups involves a relatively high risk of failure, as most young companies are unable to organize a successful launch of their products. Citing previous research, most of them collapse within three years of their emergence (Beauchamp M., Kowalczyk A., & Skala A, 2017). The most important risks associated with running a business in the form of a startup include the following:

- investment risk related to the loss of some or all of the funds invested by the originator,
- risks related to the "dilution" of shares - the acquisition of shares or stocks by new investors directly affects the reduction of the percentage share in the share capital of the company's existing shareholders,
- risks related to managing persons - poorly engaged entrepreneurs who are experts and authorities in a specific field may not have the ability or skills to create and manage a company,
- risks related to the investment horizon - the longer it is the greater the uncertainty as to the achievement of the assumed rate of return. Numerous factors affect the success of a new venture, and the longer a company operates on the market, the greater the likelihood of competition emerging,
- early development phase - the earlier a company's development phase, the cheaper the shares and the greater the risk of investment failure. The risk decreases along the refinement of the business model, the execution of orders or the sale of products, and the signing of commercial contracts.

To facilitate the access of startups to the public procurement market, the description of the subject of the contract also remains equally important. The accuracy of this description is crucial for the correctness of public procurement procedures. It guarantees both the comparability of offers (all contractors submit an offer for "the same thing"), as well as the possibility of relatively easy verification of the compliance of submitted offers with the Specification of Essential Terms of

Contract. The submission of an offer inconsistent with the Terms of Reference must result in its rejection. However, as demonstrated by our own research, the ordering parties are guided in the description of the subject of the contract by using technical standards and specific solutions known on the market, departing from defining functional requirements for products and services planned to be purchased (Borowiec, 2013). It is worth emphasizing that only the creation of the possibility of a flexible approach to the preparation of offers by contractors enables the preparation of an offer for innovative supplies, services or construction works. As many as 96% of ordering authorities admitted that at the time of describing the object of the contract they only pay attention to information and technical specifications of products that are already available on the market, or those they have already ordered before. They also often declare that the description of the object of the contract is a duplication of previous or turnkey solutions found online. Unfortunately, such an attitude is worrying and probably contributes to creating bigger obstacles for innovative entities, including startups.

In the study of the key factors for startups to enter the public procurement market, it can be seen that they all share one common feature. They can all be controlled by the ordering party (decision makers). From the point of view of network thinking methodology, this feature is important as it allows building a targeting model to increase this access. Figure 4 shows a proposal for the targeting model.

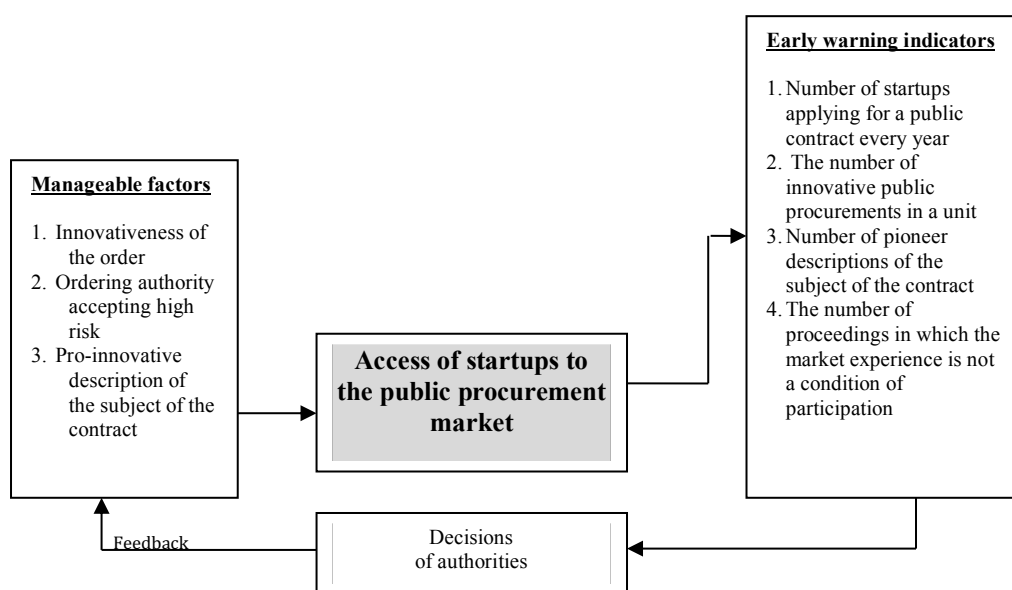


Figure 4: Targeting model to increase the access of startups to the public procurement market in Poland

The indicators present in the model point to changes, which can be registered by the ordering authority. The feedback enables the ordering authority to act appropriately due to their increase or decrease.

CONCLUSIONS

The article attempts to identify the most important factors that condition the access of startups to the public procurement market in Poland. As a result of the study, it was established that they include the following: innovativeness of orders, the ordering party's acceptance of high risk and pro-

innovative description of the subject of the contract. However, the research has demonstrated numerous problems with their use, which necessitates taking action to make them more widespread.

These activities can be divided into those related to the activities of the state, the ordering authorities and the startups themselves. To offer startups a more complete access to the public procurement market, the state should do the following:

- put more emphasis on promoting innovative public procurement and show the resulting benefits for the whole national economy,
- change legal regulations in the scope of a wider use of pro-innovative modes (e.g. pro-innovation partnership),
- support the development and financing of innovative enterprises, especially startups.

In order to better use the potential of Public Procurement Law in order to increase the access of startups to tenders, ordering parties should implement the following:

- with a particular accuracy formulate Terms of Reference that favor pro-innovation solutions,
- take care of development by participating in trainings and courses improving knowledge in the field of pro-innovative public procurement and their application,
- accept a higher level of risk and formulate conditions for participation in tender procedures in such a way that they do not discriminate against enterprises with less market experience and shorter history,
- use consultancy for more professional preparation of tender documents, especially in the case of proceedings related to technological solutions.

In increasing the access of startups to the public procurement market, the attitude of the interested parties also matters. Often, young, innovative companies are not interested in such a formula. They approach the cooperation with public entities with great reserve and quite conservatively assess their chances of obtaining orders from this sector. Research demonstrates that about 60% of startups do not even plan to participate in such tenders.

Pointing to development paths, it should be remembered that the implementation of public tenders for large State Treasury companies or administration can be a very good starting point for the development of startups in medium-sized businesses. It can also help to build the right scale of activity and credibility. This cooperation should, however, generate benefits for both parties.

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Principal Component Analysis (PCA) in the Assessment of Cooperation of Farms Implementing the Biodiversity Programme¹

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ABSTRACT

The biodiversity programme is a challenge for breeders of conservative breeds, thus they are searching for cooperation opportunities. The aim of the research was the assessment of the objectives of cooperation of cow, sheep, and pig breeders in 145 farms in south-eastern Poland. Purposive sampling was used for the empirical study. A Principal Component Analysis (PCA) of primary data from the questionnaire was used to describe the cooperation. It was found that cooperation involves three areas: development, market and marketing, information exchange, and education. The importance of the cooperation objective changes depending on the farmed species. The most common cooperation area is education and information exchange among pig breeders.

Keywords: *biodiversity, cooperation, PCA*

INTRODUCTION

Biodiversity is an area of global interest. Its value, threats to which it is exposed, and areas where efforts were necessary were described and adopted for the first time in 1992 during the Rio de Janeiro Convention (United Nations: Convention on Biological Diversity 1992). Biodiversity was defined as the diversity of life on earth including three levels (ecosystems, species diversity, and genetic diversity within species). People can affect it positively or negatively and plants and animals are necessary in the human diet.

The rapidly increasing demand for meat, milk, and other products of animal origin requires a stable and sustainable genetic base for animal production development (Krajowa Strategia [National Strategy]...2013). Adopting the Convention on Biological Diversity in 1992 prompted international measures concerning the protection of genetic resources of farm animals. National strategies of the European Union member states additionally include the implementation of the EU Biodiversity Strategy to 2020 adopted by the European Parliament in 2012. In 1996, Poland officially joined the FAO Global Strategy for the Management of Animal Genetic Resources. On the basis of the Programme of Conservation of Animal Genetic Resources, the Minister of Agriculture and Rural Development approved 32 programmes of genetic resources conservation including 75 breeds, varieties, and families of farm animals, including fish, in 1999. This conservation programmes

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package was amended, expanded, and carried out mostly using the *in situ* method (Krupiński 2008, p. 3). The protection of animals of conservative breeds was provided for, among others, in the Regulation of the Ministry of Agriculture and Rural Development of 13 March 2013, item 631 on detailed conditions and procedures of granting financial assistance under the measure “Agri-environmental Programme” under the Rural Development Programme for 2007-2013. The 7th section of the Regulation mentioned above provides for the preservation of endangered animal genetic resources in agriculture. Protected breeds include: Polish Red cattle, White-backed cattle, Polish Red-and-white cattle, Polish Black-and-white cattle; Wrzosówka sheep, Świniarka sheep, Olkuska sheep, coloured mountain sheep, colourde merino, Uhruska sheep, Wielkopolska sheep, Żelaźnińska sheep, Korideil sheep, Kamieniecka sheep, Pomorska sheep, Podhale zackel sheep, old-type Polish Merino Sheep; Puławska pig, Złotnicka White and Złotnicka spotted pig. Farmers who received premiums for breeding the above conservative breeds are obliged to meet a set of criteria, which encourage them to take on wider cooperation. Cooperation supports the development of biodiversity processes and entities involved in it. The paper focuses on the identification and assessment of the objectives of cooperation.

Maintaining biodiversity based on the preservation of conservative breeds of farm animals requires, among others, following the rules set forth in herd books and provisions of the animal premiums obtained². Cooperation among breeders may increase the efficiency of their actions. Isolated producers' actions are less effective and may be considered complementary, given the size and complexity of sustainable development (biodiversity). By establishing cooperation, breeders can expand their knowledge, gain access to new technologies, educate, and enter new markets.

Cooperation in biodiversity processes

Cooperation among farmers has multiple effects confirmed by research results. These effects include diverse benefits, not only economic, but also educational and social, described by several authors (Chlebicka, Falkowski, Wołek 2008, Krzyżanowska 2003, Lemanowicz 2004, Prus, Wawrzyniak 2009, Schiller 1967).

If these benefits are treated interdependently, the cooperation synergy effect takes place (Corning 1998; Haken 1977, 1983). Producers' participation in (institutional) group activities not only increases work efficiency, but also human creativity (Whitfield 1979). Economic and organisational or socio-economic interdependence are important benefits (effects) of cooperation. Generating economies of scale, organisational effect, or social synergy is interdependent.

The economic effect of cooperation takes place in a certain organisational and social environment. The interdependencies between the system and environment are exposed by a situational approach, which the organisation treats as a complex system made of subsystems, linked with communication, adaptation, and decision-making processes. The factor integrating social system in cooperation is the objective.

The extent of producers' cooperation is unlimited. Maintaining biodiversity processes by individual breeders is limited due to insufficient tangible and intangible assets. Therefore, breeders enter formal relationships to gain access to additional resources. In Poland, group cooperation is slowly being established. Breeders of conservative breeds rarely form agricultural producers' groups or clusters. They usually cooperate with the National Research Institute of Animal Production, sectoral unions, scientific institutes, rural advisory centres, banks, or administration. Although their cooperation is rather unstable (as it usually involves procedural, not development activities), its potential scope is wide. The cooperation area described above is important, because it creates cooperation potential and an image of breeders' institutional needs. At

² The Regulation of 13 March 2013 on detailed conditions and procedures of granting financial assistance under the measure “Agri-environmental programme” under the Rural Development Programme for 2007-2013. In package 7 of the Regulation mentioned above, the provision regarding the preservation of endangered animal genetic resources in agriculture. And another Regulation of 18 March 2015 for 2014-2020.

the same time, the objective of the cooperation of breeders from different sectors may arise from the internal situation. The sector of dairy and meat cattle, pigs, and sheep faces different problems. The problems of a sector may determine the cooperation objective. For example, prices volatility on the pork market may lead to cooperation in the area of information exchange rather than marketing. Similarly, in the milk and meat cattle sector, limits (milk quotas) and raw material (milk, meat) quality standards motivate cooperation in the area of gaining specific knowledge and education. Small market experience of sheep breeders may encourage them to cooperate in terms of looking for new outlets and marketing development.

Research methods

The aim of the study is to assess the cooperation of breeders of conservative breeds (of cows, pigs, and sheep) as the main attribute for networks they form part of. In agriculture, cooperation creates opportunities for development and limiting negative effects of natural risks for farms. Apart from market problems (changing consumers' preferences), breeders of conservative breeds face natural obstacles (animal diseases, pollution and greenhouse gas emission limits, raw materials (e.g. meat) processing limits). Due to multiple limitations, the cooperation among breeders may be very wide and diverse.

The final list of studied cooperation objectives has 17 positions, including joint actions concerning products, technology, access to specialist services, trainings, purchase of materials/equipment, environment, development projects, strategic information, looking for new clients, distribution channels, participation in fairs and study tours. Cooperation objectives propositions were based on non-agricultural economic cooperation networks, assuming that market-oriented models permeate to the agribusiness sphere by way of innovation diffusion and are harbingers of change. The list of studied objectives is presented in table 1.

Research concept

145 farms from south-eastern Poland carrying out the agri-environmental programme within the scope of package 7 “Preservation of endangered animal genetic resources in agriculture” breeding cattle, sheep, and pigs³ were included in the study.

The aim of the study was to assess cooperation in a network of farms breeding animals of conservative breeds. Due to the lack of cooperation models for breeders carrying out biodiversity programmes, the following research questions were formulated:

1. Which cooperation objectives do cattle, sheep, and pig breeders choose (value the most)?
2. What is the position of objectives related with biodiversity (e.g. environment protection) among the valued directions of cooperation?

Based on the research questions, two hypotheses were formulated:

Hypothesis 1: Regardless of the number of cooperation objectives, cooperation directions common for all breeders can be distinguished.

Hypothesis 2: The assessment of cooperation objectives depends on the species of bred animals.

The questionnaire presented 17 cooperation categories the breeders judged them on a scale of 1–6 points. The cooperation category was supposed to be a criterion for isolating an informal network. Due to the number of categories, the Principal Component Analysis (PCA) was used. The PCA allows the number of variables to be reduced (to the principal components*) and allows for a structure in the relations between variables to be found (cooperation objectives).

The number of categories (cooperation objectives) was reduced using the Cattell criterion, scale reliability estimation, and measurement of internal consistency of cooperation dimension using Cronbach's alpha test in general and in groups of pigs, sheep, and cattle conservative breeds. The

³ Cattle breeds: Polish Red, White-backed, Polish Red-and-white; sheep breeds: Uhruska, Świniarka, Black-headed, Olkuska, Podhalański zackel; Pig bred: Puławska.

Cronbach’s alpha test was used to evaluate the reliability of the dimensions of cooperation assessment. Values greater than 0.7 of this coefficient indicate a high scale reliability.

The above analyses were supposed to help identifying (larger) scopes of cooperation of farmers breeding animals considering 3 bred species (cattle, sheep, pigs), as well as providing a score distribution for the studies breeds (of cattle, sheep, and pigs) within the cooperation area with the highest score.

Detailed analyses (in groups: sheep, cattle, pigs) demonstrated sectoral differences of cooperation (different approaches to cooperation). One can expect that prices volatility (e.g. swine livestock) motivates towards increased cooperation in the area of information exchange.

Principal Component Analysis (PCA) of the assessment of cooperation

Principal Component Analysis is a method of transforming variables into new, orthogonal variables, the so-called principal components. This is a procedure of the orthogonalisation of variables facilitating the construction of a theoretical model describing the structure and relations between the studied phenomena.

As a result of Principal Component Analysis, the number of principal components equals the number of initial variables (m-dimensional system). The cycle described in the “Research methods” section allowed for 3 components from 16 variables based on the Cattell criterion to be isolated (Tab. 1).

As a result of selection, 5 cooperation dimensions were excluded (a. creating new products, d. technology transfer, e. help in accessing specialist services, g. creating new technologies together, m. purchasing materials/equipment together). The cooperation dimensions selection revealed a deficit of cooperation between farms with animals of conservative breeds concerning creating new products together, creating and exchanging technology, and help in accessing specialist services.

Table 1 Factor loadings for variables for farms cooperation

| Variables | Factor 1 | Factor 2 | Factor 3 |
|--|-----------------|-----------------|-----------------|
| a. Creating new products | 0.592598 | 0.527320 | 0.194437 |
| b. Actions in favour of environment protection | 0.640762 | 0.291342 | 0.220803 |
| c. Services barter | 0.714510 | 0.175518 | 0.164894 |
| d. Technology transfer | 0.628737 | 0.076660 | 0.449874 |
| e. Help in accessing specialist services | 0.614898 | -0.070935 | 0.485109 |
| f. Carrying out development projects | 0.798666 | 0.247842 | 0.206951 |
| g. Creating new technologies | 0.686826 | 0.498146 | 0.179264 |
| h. Exchange of strategic information | 0.092677 | 0.466703 | 0.494063 |
| i. Creating common distribution channels | 0.142640 | 0.847204 | 0.029116 |
| j. Looking for clients | 0.219548 | 0.811080 | 0.192788 |
| k. Entering new markets | 0.473355 | 0.697437 | 0.174023 |
| l. Acquiring investment funds together | 0.762139 | 0.247263 | 0.264548 |
| m. Purchasing materials/equipment together | 0.546022 | 0.327251 | 0.168416 |
| n. Trainings | 0.181123 | 0.156433 | 0.756513 |
| o. Participation in fairs | 0.272170 | 0.072229 | 0.794814 |
| p. Study tours | 0.330729 | 0.252876 | 0.657599 |
| r. Promotion | 0.364595 | 0.526760 | 0.446679 |
| Output variance | 4.684672 | 3.333413 | 2.873179 |

Factors 1-3 presented in Table 1 are new variables that are not directly observed, but determined based on primary variables (Sagan 2003, pp. 39-52). These factors synthetically reflect a significant portion of information from the data set, and at the same time, each of them has new substantial content. They can also be perceived as “identifiers” grouping the initial variables in substantively consistent sets.

Based on correlation analyses in three groups of factors, the highest correlated variables representing cooperation objectives in each group of factors were determined (1-3; Tab. 1). In group 1, the highest correlation with the principal factor (No. 1) was shown by 3 variables (cooperation objectives): f. Carrying out development projects (correlation coefficient $R = 0.7986$), l. Acquiring investment funds together (0.7621), c. Services barter (0.7154).

In group 2, only two variables were highly correlated with the principal factor: i. Creating common distribution channels (0.8472) and j. Looking for clients (0.81108), but these correlations were stronger.

In group 3, these two characteristics (variables) among the twelve analysed were also highly correlated with the principal factor: n. trainings (0.756513) and o. participation in fairs (0.7948; Tab. 1).

Table 2 contain the results of reliability analyses for the three principal dimensions (development).

Table 2 Reliability analysis results for the scale (1st main dimension) “Development”

| Scale summary: Mean = 6.67586 Std. dev. = 5.11110 Card.:145 Cronbach's alpha: .849090 Standardised alpha: .849225; Average correlation between positions: .588202 | | | | | |
|---|----------|----------|-----------------------|--|------------------------|
| Variables (Cooperation objectives of dimension: development) | Means | Variance | Standard deviation | Correlation between position and scale ⁴ | Cronbach's α |
| b. Actions in favour of environment protection | 4.682759 | 14.94763 | 3.866217 | 0.676273 | 0.814009 |
| c. Services barter | 5.062069 | 16.30649 | 4.038130 | 0.618692 | 0.836523 |
| f. Carrying out development projects | 5.248276 | 15.35905 | 3.919062 | 0.710131 | 0.799043 |
| l. Acquiring investment funds together | 5.034483 | 14.69536 | 3.833453 | 0.749318 | 0.781367 |

Table 2 presents the reliability analysis results for the **development** scale. A scale is considered reliable if the Cronbach's alpha value is 0.7 or higher. The first column contains the mean value for the whole scale after eliminating a given position (the mean for the whole scale is 6.6759). The second and the third column contain information about variance and standard deviation after eliminating particular positions. The fourth column presents correlation coefficients between particular positions and the whole scale (sum of all positions).

Cooperation concerning objective l. Acquiring investment funds together had a strongest positive relationship with the “Development” dimension (correlation coefficient 0.7493). Actions in favour of environment do not have the highest (nor the lowest) correlation with the main dimension. Among four selected variables, they are in third place (Tab. 2).

The last column (Tab. 2) is the Cronbach's α reliability coefficient after eliminating particular positions. Table 2 shows that all positions highly correlate with the whole scale (correlation > 0.5) and eliminating any of the positions of the scale does not improve the quality of the scale. Thus, it should be assumed that the positions with the highest correlation with the “Development” dimensions were properly selected.

Analogically the scales should be considered reliable also for two remaining dimensions (2. Market and marketing and 3. Exchange of information and education), as their level is over 0.7 (respectively: 0.8490 and 0.8498). The variables with the highest correlation with the “Market and

⁴ Between variables and aggregate scale (Gatnar, Walesiak 2004, p.72).

marketing” dimension are k. Entering new markets (0.7657) and j. Looking for clients (0.7456). Dimension 3. “Exchange of information and education” has the highest correlation with the variable o. Participation in fairs (0.6412).

According to the scale reliability test (using the Cronbach’s alpha coefficient), the best match was found in dimension 2. Market and marketing (Cronbach’s alpha = 0.8490) and 1. Development (Cronbach’s alpha = 0.8498), and a bit weaker in dimension 3. Information exchange and education (Cronbach’s alpha = 0.7587).

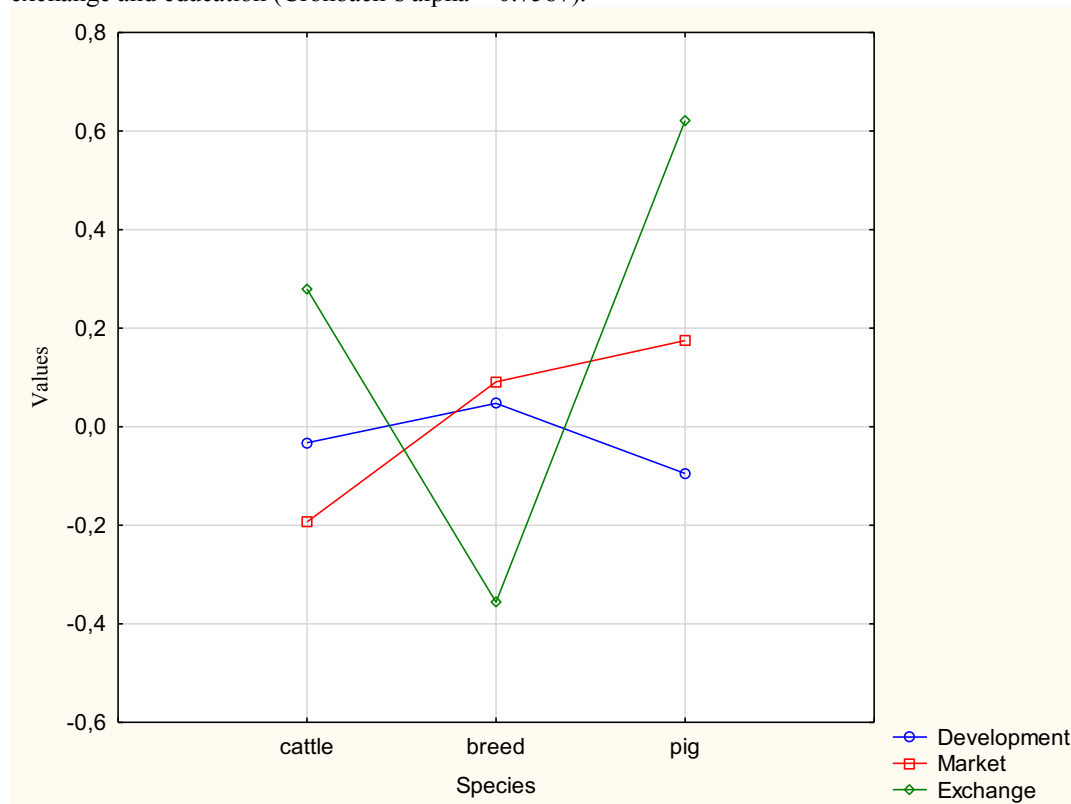


Diagram 1. Assessment of three cooperation dimensions per bred animal species

The graphical overview of the PCA results in farm animal species profiles indicates that dimension 3. Exchange of information and education (the highest means) and 2. Markets were the most important for networking, except for sheep breeders, who considered the 3rd dimension the least important and gave it the lowest score (Diagram 1).

In animal species profiles, the most important for networking was dimension 3. Information exchange and education in pigs 0.6 and cattle (0.3). Dimension 3. Information exchange and education as the least important for sheep breeders (its mean value was negative: -0.38).

The second important dimension for most breeders was dimension 2. Market and marketing, although it did not matter much to cattle breeders (negative score: -0.2). Dimension 1. Development was valued the least by cattle and sheep breeders and the most by Puławska pig breeders. As for the animal species breakdown, pig and cattle breeders valued 3. Information exchange the most (mean scores: 0.6211 and 0.2796) 0.0910). Only sheep breeders considered dimension 1. Development the most important (mean score: 0.9697).

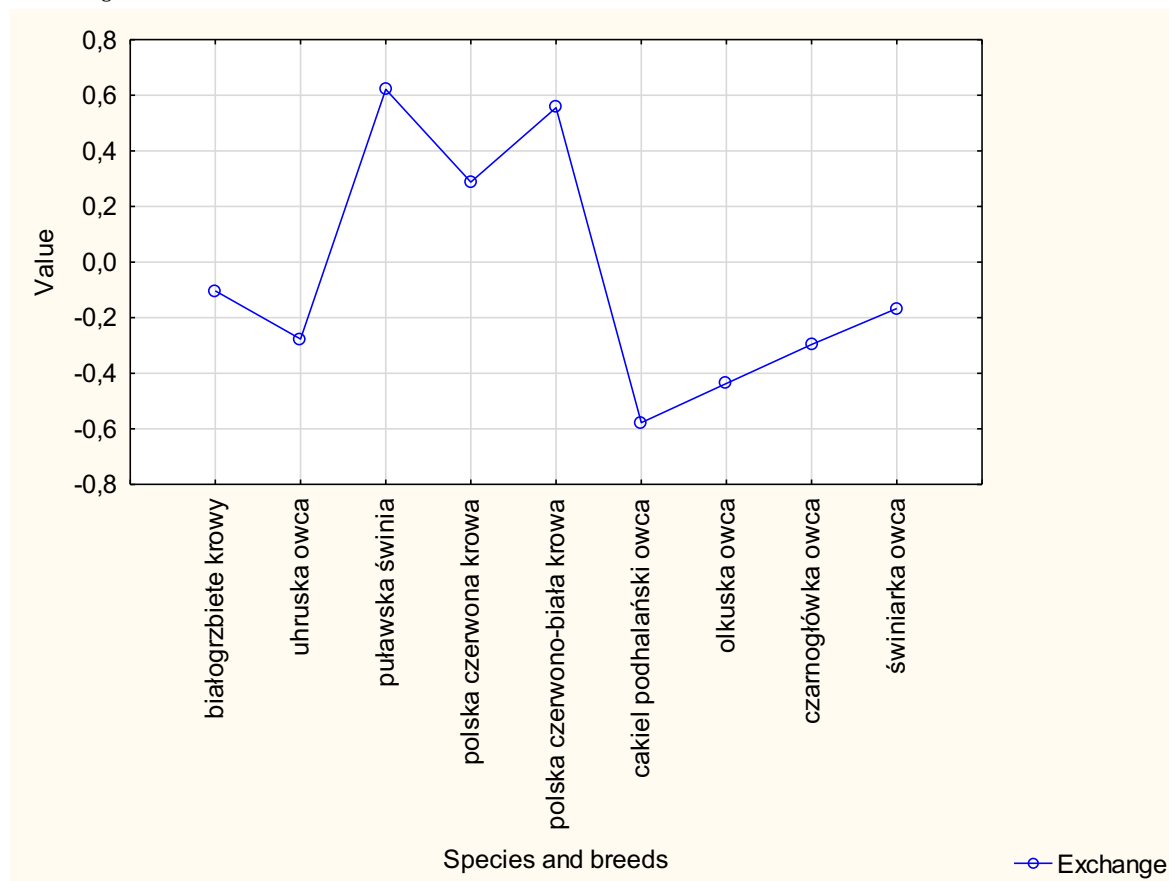


Diagram 2 Assessment of the principal cooperation dimension 3. Exchange of information and education per conservative breeds of animals

Exchange of information and education were of highest value for breeders of Puławska pig and two cow breeds (Polish red-and-white and Polish red). Breeders of all sheep breeds (except from Uhruska) did not consider the aspect of knowledge exchange important (Diagram 2).

CONCLUSIONS & ACKNOWLEDGEMENT

Cooperation between breeders of cattle, pigs, and sheep of conservative breeds was not unambiguous and defined by one big objective. Using the PCA analysis, the factors (objectives) shaping it were discovered and comprehended. The most important conclusions include:

1. Distinguishing three cooperation dimensions depending on scale size: 1. Development, 2. Market and marketing, 3. Exchange of information and education. The Cronbach's alpha test indicated that the best match was dimension 2. Market and marketing. Dimension 3. Exchange of information and education got a slightly worse result (confirmation of the first hypothesis).

2. In animal species profiles, the most important for networking were dimensions: 3. Exchange of information and education (pigs and cattle) and 2. Market and marketing (sheep) (confirmation of the second hypothesis).

The developmental dimension (1. Development) was the least important for breeders of conservative breeds (except for sheep breeders).

3. Exchange of information and education were of the highest value for breeders of the Puławska pig and two cow breeds (Polish red-and-white and Polish red). Breeders of all sheep breeds (except from Uhruska) did not consider the aspect of exchange of information and education important (diagram 2).

4. The importance of cooperation in favour of the environment was indicated by breeders of conservative breeds, which is a premise for development of biodiversity processes. Sheep breeders valued this aspect the most. Initiating campaigns promoting cooperation in favour of the environment among cattle and pig breeders would be recommended. Pig farmers will be a more difficult target due to the consequences of African swine fever.

3. Lack of cooperation concerning: creating new products together, technology exchange, or help with accessing specialist services may indicate a gap of unconscious benefits or lack of opportunities to satisfy them. The author believes that the low position of innovation (concerning process, service, and product-related elements of the cooperation area 1. Development) is due to small conviction and involvement in cooperation with academic centres.

PCA analyses helped determine the direction of cooperation among breeders depending on bred species (of cattle, pigs, and sheep) and their conservative breeds. From a practical point of view, the obtained results allow understanding the needs of the breeders carrying out the biodiversity programme better.

Firstly, the assessment of breeders of conservative breeds did not indicate uniform thinking.

Secondly, only sheep owners considered cooperation in favour of environment protection important, unlike cattle and pig breeders. Thus, awareness of the role of pig and cattle breeders in sustainable development needs to be increased. Sheep grazed in mountain pastures make mountain landscapes more attractive. For example, Podhale sheep breeders are aware of that and cooperate with the Tatra National Park in EU projects. Sheep breeders do not need that much information exchange. They benefit from cooperation concerning 2. Market and marketing and 1. Development. A poor understanding of environmental aspects by pig and cattle breeders limits their opportunities of development in the era of sustainable development, especially given that pig production is a source of sewage harmful to the environment.

Further research concerning the reasons behind different views of breeders carrying out the biodiversity programme is recommended. A PCA analysis allowed the principal direction of cooperation of all breeders to be distinguished (Market and marketing) and indicated that two groups of breeders (of pigs and cattle) value information exchange and education the most. The situation reflected by the research result is an opportunity for academic centres (studies and analyses of breeders' needs) and advisory centres (training).

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Share of the wage factor in national income – selected aspects

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ABSTRACT

The aim of this study is to examine changes in the share of the wage factor in national income, in selected EU countries against labour productivity and investment rates reflecting changes in capital-labour relations, indicated by researchers as determinants of change of the share of the wage factor in national income. The scope of the study includes a review of literature devoted to the issue of wage factor share in national income and the empirical part related to this issue. The study used elements of descriptive statistics and the method of induction.

The results of the study show that in the years 2005–2015 a decrease in the share of the wage factor in national income was observed in Poland, Hungary and Spain. In the case of the Czech Republic, Slovakia, Germany and France, the share of the wage factor in national income has increased.

What is more, the conclusions from previous research regarding the impact of financial crises on reducing the share of wages in national income have not been confirmed. In the majority of the countries surveyed, the financial crisis did not contribute to such changes. It cannot be clearly stated that there is a connection between labour productivity, investment rate and the share of the wage factor in national income.

Keywords: *share of the wage labour in national income, labour productivity, investment rate*

INTRODUCTION

Labour, together with capital and technology, determines the production capabilities of enterprises, and as a consequence, the potential product achieved by the economy. The distinctness of labour in relation to other means of production due to human traits, such as preferences, motivations, feelings or sensitivity to fair and honest treatment (Snowdon, Vane, 2006) arouses great interest among researchers. As a result, this factor should be considered not only from the point of view of economics but also from the perspective of other areas of functioning of individuals, societies or enterprises.

Work fulfils parallel social and economic functions, constituting interrelated and interdependent elements of one whole. Individual benefits may be a result of employees' earning income from work, satisfying their needs or having opportunities for self-fulfilment or development. On the other hand, the involvement of labour resources by enterprises can generate profits and foster their further development. The labour used in the production process is one of the factors that contribute to the growth and development of the national economy. Thus, it leads to an increase in the income of the society and the state.

Due to the fact that the use of labour and capital in individual national economies is varied and determined by the impact of various factors, it can be assumed that the share of wages and capital in the national income will differ both temporally and spatially. It should be mentioned that the share of wages in national income over the last 30 years shows a downward trend in advanced economies.

However, many economists still maintain the view that the share of wages remains almost constant in the long term, in accordance with Bowley's law (Kramer, 2010).

Therefore, it is worth considering the changes of the share of the wage factor in the national income of the transformed economies of Central and Eastern Europe, which have been EU members since 2004, against the background of selected other EU economies according to selected determinants.

The aim of this study is to examine changes in the share of wage factor in national income (% GDP), in the years 1995–2016 against the background of labour productivity and investment rate as factors reflecting the transformations of the capital-labour relationship.

REVIEW OF THE LITERATURE

Contemporary theories of the labour market, referring to the degree of involvement of the labour factor, differ depending on the assumptions made for the research. Among other models, in the theory of effective pay a large role is attributed to labour productivity, which depends on many factors, such as employee qualifications, levels of remuneration and the types of performed work. The explanations of the beneficial impact of high remuneration on employee productivity seem interesting. According to Dickens and Lang (1993) and Sapsford and Tzannatos (1986), this is due to:

- ✓ the fact that high wages allow to keep work discipline in an enterprise,
- ✓ the possibility of retaining employees being the subject of investments in the form of financing various types of training courses,
- ✓ the protection against the so-called negative selection. By paying employees more than their equilibrium wage would indicate, employers are able to engage individuals they consider to be appropriate and trustworthy.

Such an approach to the wage factor could justify the increase in the importance of labour share in corporate income.

The assumptions of the theory of effective work show that high wages are the result of the employer's conscious pursuit of acquiring employees possessing above-average qualifications and professional skills. Employers' setting a level of wages higher than the one corresponding to the balance of labour demand and supply contributes to the disruption of the price and wage mechanism, and as a consequence an imbalance in the labour market appears (Bosworth, Dawkins, Stromback, 1996).

Including the labour factor in the economic process should translate into the benefits achieved by enterprises that use it. The theory of economics concerning the labour market shows that the employee's remuneration should depend on the labour productivity but should not be higher than the marginal labour productivity.

It should be emphasized that labour productivity is the result of engaging not only the labour factor, but also the capital used. Depending on its size and structure, a given economy is characterized by a specific level of technology and capital intensity and, as a consequence, a certain capital-labour relationship. Changes in the level and structure of capital result mainly from the implemented investment processes. Against the background of the above considerations, it can be stated that depending on the decisions taken by enterprises regarding the shaping of capital and labour resources, there may exist a differentiation in the share of involved factors in the results of their operations. As a consequence, there may be changes in the share of these factors in the national income on the scale of the whole economy.

Many economists, among others: S. Bentolila i G. Saint-Paul (2003), A.E. Harrison (2000), K. Lee i A. Jayadev (2005), X. Raurich, H. Sala, V. Sorolla (2011), M. Lawless, K. T. Whelan (2011) dealt with research on the share of wages in national income. The neoclassical theory of the enterprise, defining the path of expansion, suggests that the optimal combination of means of production takes place when the marginal rate of technical substitution of capital for labour is equal to the relative price of the labour factor (labour-capital). The fall in the relative price of capital (*ceteris paribus*) leads to an increase in demand for capital and a fall in demand for labour (depending on flexibility and substitution). An increase in the scale of production usually results in an increase in labour and

capital consumption, provided that they are treated as equivalent factors (Jones, 2005; Houthakker, 1955).

According to S. Bentolila, G. Saint-Paul (2003), the diversified capital intensity of production and the price of imported materials explain differences in the share of wages in national income. An important role can also be played by the bargaining power of labour associated with the growing globalization processes that A.E. Harrison was dealing with in her research when looking for models indicating the factors determining the share of wages in the national income. In her opinion, e.g. financial openness enabling the flow of capital between individual countries (inflow of foreign direct investment) reduces the importance of labour. This means that as far as the influence on national income is concerned, capital is more important than labour. If there are restrictions on the capital flow, then the share of labour increases. Also the currency fluctuations that lead to a reduction in the share of wages in national income turned out to be an important factor.

K. Lee and A. Jayadev (2005), based on research conducted in the years 1973–1995, stated that the financial openness of the country reduces the share of wages, both in highly developed countries and in those being on earlier stages of development. This effect is independent of the effects of financial crises. During financial crises, and in the short period after them, the share of wages decreases and remains low even when the national income "recovers" to the level from before the crisis. All empirical studies indicate that financial openness and financial crises reduce the share of wages in national income.

The empirical research also provides some explanations regarding changes in the labour share in national income related to specific employee protection policies. A policy conducive to labour protection contributes to maintaining high importance of labour for the national income. It should be remembered in this respect that wages or employment fail to keep pace with economic growth. If the share of wages were constant (and not decreasing), then the economic growth would have an impact on higher wages or employment reduction (or both). The reason for the decrease in the share of wages in national income is the slow increase in wages and low employment flexibility.

Measurement of income from work can be difficult to conduct in countries where many people achieve income from self-employment or work in family enterprises. A study carried out by D. Gollin (2002) shows that self-employment and the level of economic development have a large impact on the share of wages in national income in individual countries.

Research on the share of wages in national income was also conducted by A. Guscina (2006). Based on a sample of 18 OECD countries, he observed that the share of wages was highest in the 1960s and 1970s, and then it decreased by 5 percentage points. This confirms the rapid decline in the trend. Accordingly, the presented study results should be approached with some caution.

METHODOLOGY OF RESEARCH

The empirical part includes research on the changes in the share of the wage factor in national income in selected EU countries in the last twenty years. The research is based on the group of Central and Eastern European countries which in 2004 joined the EU structures (Poland, the Czech Republic, Hungary and Slovakia), as well as countries which have been members of this group for many years, i.e. Germany, France and Spain. The division into two groups of countries was dictated by the fact that post-communist countries that were in the initial phase of transformation were characterized by a much lower level of development than countries with established market economies. The real convergence processes observed in these economies took place through a series of structural changes, including those related to the elimination of technological underdevelopment, the development of international trade, the reallocation of means of production between individual sectors of the economy (flow from sectors with low productivity of labour and capital to highly productive ones). As a result of these processes, changes in the relationships between the amount of physical capital and labour involved could be observed. Taking into account the purpose of the study, a selection of factors determining the share of the wage factor in national income in individual economies, including changes in labour productivity and investment rate, was made. The

study used elements of descriptive statistics which allowed to present changes in the share of this factor and to compare the results for individual economies with the trends presented so far in the literature.

SHARE OF THE WAGE FACTOR IN NATIONAL INCOME - DISCUSSION AND CONCLUSIONS

In four of the seven countries surveyed in the study, the share of the wage factor in national income measured as the percentage of GDP decreased in the years 1995–2016. The group of these countries included Poland, Hungary, the Czech Republic and Spain. The largest decrease was recorded in Poland — it amounted to 11.2 p.p. In Hungary, the decrease was 8.5 p.p., while in Spain it was equal to 4.0 percentage points. In Germany, the decrease was lowest and amounted to 2.0 p.p. In the analysed period, France was characterized by the highest stability of the share of the wage factor in national income. The share of this factor in 2016 increased by 1 p.p. in comparison to 1995.

Figure 1: Share of the wage factor in national income (measured as adjusted wage share, % GDP)

Source: own elaboration based on data from Eurostat and OECD

The results for the Czech and Slovak economies seem interesting. In both countries, the share of wages in national income in 1995 was very low compared to other economies studied. It differed by approximately 15 p.p. In the analysed period, an increase in the share of the wage factor in national income was observed in these countries — as a result, in 2016 this share was similar to that achieved in countries such as Poland and Hungary. It should be mentioned that in the post-communist countries, the share of the wage factor in national income is lower than in countries with stable market economies. In the analysed period, the spread between the highest and the lowest share of the wage factor in the national income decreased by less than 2 p.p. Both in 1995 and in 2016 the highest share of the wage factor was recorded in France, while the lowest one occurred in Slovakia.

Against the background of the presented results, it is worth looking at one of the factors determining the share of wage factor in national income, i.e. labour productivity measured by the value of GDP per 1 man-hour. In this case, the research period was limited to the years 2001–2016 due to limited access to source data (Figure2).

In 2001, the countries of Central and Eastern Europe were characterized by a very low level of labour productivity in comparison with countries with established market economies. The productivity of labour in these countries was more than twice lower. During the 15 years covered by the study, there was a high increase in labour productivity in these countries. In Slovakia, it amounted to 65.8%, in Poland over to 55%, in Hungary to over 40%, while in the Czech Republic it reached 39.8%. In Germany, France and Spain productivity increased by approximately 15%. This confirms the convergence of the studied economies, shown by the results of the research presented in the works of Caselli and Tenreyro (2005), Ben-David and Berman, Machin (1993).

Relatively higher labour productivity growth in the post-communist countries compared to the countries with an established market economy resulted, among other things, from bridging the technological gap resulting from the opening up of these economies, especially after the accession to the EU. This process has boosted capital inflows and made it possible, due to the cohesion policy funds, to finance the necessary infrastructure to speed up the convergence process. The discussed phenomena contributed to the substitution of labour with capital and to the achievement of jobless economic growth (e.g. in Poland), and consequently to the increase in labour productivity. Against this background, it can be assumed that as a result of these processes the share of capital income increased in relation to the share of labour income. Thus, the observed increase in labour productivity in the analysed economies probably justifies the decrease in the share of labour factor in national income, which took place in such countries as Poland and Hungary.

Figure 2: Labour productivity (GDP per 1 hour of work in US dollars)

Source: own elaboration based on data from Eurostat and OECD

In order to confirm the logic of the previous considerations, it is worthwhile to look at the factor determining the share of the labour factor in the national income, i.e. the physical capital, the level of which is determined by the scale of investment. The rate of return on investment, denoting the profitability of an investment, determines the increase in the income of capital owners, and thus changes the proportions of capital and labour in income. Moreover, investments often result in the employment of highly qualified individuals (in particular investments related to the introduction of new technologies), thus contributing to the increase of salaries of a given group of workers. The substitution of labour with capital may lead to a reduction in the number of employed, in which case the aggregated income from labour is likely to decrease in relation to the income from capital.

The above considerations confirm the reasons for convergence presented in the literature, which indicate that one of the important factors of this phenomenon are investment processes involving domestic and foreign capital and introducing new technologies to the economy, as well as the changes in the labour market that accompany them.

A measure reflecting the scale of investment in the economy is the investment rate as a percentage of GDP. In order to measure the investment activity of the examined economies, the rates of investment for non-financial enterprises are presented in Figure 3. (Figure 3)

Figure 3: Investment rates for non-financial enterprises (% of GDP)

Source: own elaboration based on data from Eurostat and OECD

In the case of studies related to investment outlays made by non-financial enterprises, the research period was limited to the years 2005–2015. The highest average annual investment rate was recorded in Slovakia, while the lowest one in Germany. The difference between these countries in the value of this measure amounted to approximately 12 percentage points. A high investment rate was also recorded in the case of the Czech Republic, where it amounted to 30.4% on average per year. A similar investment rate, measured as an annual average, was achieved in Spain and Hungary. It amounted to approximately 26%. Poland was characterized by a relatively low investment rate, close to the level of France, i.e. approximately 23%.

As it has already been mentioned, the level and structure of investments shaping the capital intensity or labour intensity of the economy have a different effect on labour productivity. This situation can be observed in the conducted research. In the case of Poland, the relatively low level of investment in the years 2005–2015 translated into a high increase in labour productivity. The average annual increase in investment by 23.5% was accompanied by an increase in productivity in 2015 by 30.1% compared to 2005. In the same period in the Czech Republic, an increase in investment of 30.4% was accompanied by an increase in labour productivity by 20.5%. It means that one percent of the investment rate growth in Poland was accompanied by 1.3% increase in labour productivity. However, in the Czech Republic 0.67% increase in labour productivity accounted for one percent of the investment rate growth. In Spain, in turn, one percent of the investment rate growth was accompanied by an increase in labour productivity by 0.49%. Even lower increases in labour productivity per one percent of the investment rate growth were recorded in Germany and France — 0.43% and 0.27%, respectively.

The conducted study does not lead to clear conclusions regarding the existence of a connection between labour productivity, investment rate and the share of the wage factor in national income. In the years 2005–2015 a decrease in the share of the wage factor in national income was observed in Poland, Hungary and Spain. In the case of the remaining countries, i.e. Czech Republic, Slovakia, Germany and France, the share of the wage factor in national income has increased. It can be concluded that changes in the group of post-communist countries, as well as in the group of countries with established market economies, are multi-directional in nature. When looking at the changes in the labour productivity and the investment rate, it is not possible to clearly indicate the direct relationship between these determinants and the change in the share of the wage factor in national income. In the case of Poland, Hungary and Spain, it is possible to confirm a decrease in the share of the wage factor in national income in line with the survey results presented in the study. What is more, the conclusions from research conducted by K. Lee and A. Jayadev regarding the impact of financial crises on reducing the share of wages in national income have not been confirmed. In the majority of the countries surveyed, the financial crisis did not contribute to such changes.

CONCLUSIONS

In the last 30 years, there has been a decline in the share of wage factor in national income in many economies of the world. While looking at the European countries accepted for the study, i.e. four states undergoing transformation processes in the early 1990s and three countries with well-established market economies, it can be stated that this process did not occur in all of them. As shown by the results of the study, in the years 2005–2015 a decrease in the share of the wage factor in national income was observed in Poland, Hungary and Spain. In the case of the remaining countries, i.e. Czech Republic, Slovakia, Germany and France, the share of the wage factor in national income has increased. As a result, it can be concluded that changes in the group of post-communist countries, as well as in the group of countries with established market economies are multi-directional in nature. It should be highlighted that in the post-communist countries, the share of the wage factor in national income is lower than in countries with stable market economies. In the analysed period, the spread between the highest and the lowest share of the wage factor in the national income decreased by less than 2 percentage points.

What is more, the conclusions from research conducted by K. Lee and A. Jayadev regarding the impact of financial crises on reducing the share of wages in national income have not been confirmed. In the majority of the countries surveyed, the financial crisis did not contribute to such changes.

Also, it cannot be clearly stated that there is a connection between labour productivity, investment rate and the share of the wage factor in national income. The productivity of labour in countries with established market economies is more than twice as high as in the post-communist countries. The increase in labour productivity observed in these countries confirms the ongoing convergence processes and justifies the decline in the share of wages in national income which took place in Poland and Hungary.

Another factor determining the share of the wage factor in the national income analysed in the study was the investment rate. In this case, it appeared that the diversified average annual investment rate did not affect the growth of productivity.

Considering the fact that in the majority of highly developed EU economies, the share of wages in national income shows a downward trend or remains unchanged, it can be said that perhaps a larger role should be attributed to the results of research conducted by A. Bowley, showing that in a longer perspective the share of wages remains almost constant.

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Economic behavior of young farmers in Eastern Poland concerning the implementation of innovations

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ABSTRACT

The basic goal of the article was to show the innovations implemented in farms of young farmers in Poland in the period of two previous years, i.e. 2015 and 2016. The research was done in 2017 in Eastern Poland. In addition, the aim was also to show sources of information among farmers about innovations. The innovations introduced by farmers were classified in three groups. The first group includes innovations which refer to plant production, the second group shows innovations in livestock production and in the last group there were general farm innovations in the scope of economics of agricultural production and organization of farms. The scientific research showed that young agricultural producers, up to 40 years old, implemented 27 various types of innovations on their farms from 2015 to 2016. The most frequently applied solutions were the types of innovations with regard to organization and management of a farm. The Internet (70% of the questioned young farmers) and the Agricultural Advisory Centres (20%) constituted the most used sources of information with new solutions.

Keywords: innovation, young farmers, farms of Eastern Poland

INTRODUCTION

In the age of commercialization of innovation the cycle of its market life starts which is accompanied with two phenomena. They are a process of dissemination of information about a new solution (spreading of innovations on the market) called diffusion of innovation and a process of its acceptance (adoption of innovations) (Figiel, 2016).

The contemporary European approach to development of agriculture and rural areas is based on the harmonious connection of the environmental and economic aims. The socio-economic factors or the production and economic conditions are indicated among the factors determining the implementation process of innovations on farms. Polish agriculture falls behind other economic sectors in the field of diffusion of innovations. It is reflected in such indicators as labour and land productivity, the share of capital for fixed assets, farmers' average age and their level of education as well as access to the Internet in rural areas (Tabaka 2015). The

opportunity for innovations implementation in small farms in rural areas has primordial significance for their development (Steiner et al., 2011).

The implementation of innovative solutions in agriculture mainly aims at enhancing competitiveness, maintaining food security, sustainable development through, for instance, the rational economy of natural resources, environmental protection and biodiversity. The mentioned factors force promotion of innovation in agriculture.

Innovations on farms are required by the contemporary market and connected with modernization of Polish agriculture, spreading any novelties, improvements of the already existing systems (Kałuża, Rytel 2010). Agricultural innovations can be actions connected with spreading biological progress (Kałuża, Ginter 2014).

The essence of innovative solutions on farms was emphasised in the document the Europe 2020 Strategy. Simultaneously, the Strategy places the emphasis on promotion of innovations. Therefore, the necessity of the existence of connections (interactions) between an enterprise (a farm) and other entities as well as institutions and between enterprises (farms) themselves is stressed. Functioning of these interactions favours mutual openness to generate innovations, which consequently leads to fast diffusion of knowledge and innovations in the economy as well as to quick adjustment of the social system to technological changes. This resultant of numerous interactions of different actors makes up the agricultural innovation system (Figiel 2016). Adoption of a new farm technology is not instant act but a mental process through an individual passes from hearing about it to its ultimate adoption. (Mai Chand, DD Sharma, Rakesh Gupta 2011). However, there are barriers which hinder diffusion of innovations in this sector. Probably, the most important and the most difficult obstacle to overcome is in this scope is mentality and human habits (Popławski 2015). No financial resources is an essential reason for lack of innovative actions among farmers. Support provided under the instruments of the Common Agricultural Policy can play an important role in stimulation of innovativeness. Thus, educating farmers is a key element. The study of adoption of innovations by farmers in systematic way has a long history. Until the early 1970s, the dominant theory in the adoption of innovations was diffusion model. This model tries to predict innovations' adoption behavior according to the personal characteristics related to innovation (Padel, 2001). Diffusion of innovation theory model expresses that we cannot potentially expect to accept innovation by adopters as long as they are not aware of the innovation.

Awareness and positive attitude toward innovation come from information about innovation (Napier et al., 2000). The aim of the paper is to identify conditions and factors influencing the implementation process of innovations on farms in Eastern Poland illustrated with the example of 100 family farms. Any changes made on farms implemented on purpose the aim of which was to replace previous solutions with other new ones for a given farm were admitted as an innovation. The objective of the studies was also to identify which sources and types of information are used by young farmers to manage a farm in the implementation process of innovative solutions.

MATERIAL AND METHODS

In order to define factors motivating the innovation the implementation of innovative undertakings on farms, the research was done in 2017 for the period of 2 previous years, i.e. 2015 and 2016. The elementary research tool was a questionnaire, developed in the Institute of Economics of Agriculture and Agribusiness, the Institute of Agronomy in the Faculty of Natural Sciences of the Siedlce University of Natural Sciences and Humanities. The empirical material included the results of the research done on 100 deliberately chosen farms, in the area of plant production (65) and livestock production (35). The studied farms were managed by young farmers up to 40 years old since these farmers could benefit from the action "Setting up young farmers" under the Rural Development Programme 2007-13, doing agricultural activity in the area of Eastern Poland. The declaration of the respondents concerning the

implementation of innovations on the farm within last 2 years enabled the verification of the questionnaire. Moreover, in order to select farms, the method of the deliberate choice was applied, taking the following criteria into account: 1) the acreage of the agricultural area of a farm over 5 hectares as such farms can be regarded as developmental because, as J.S. Zegar claims, the size of a farm is of a significant importance for the perspectives of its existence. The mentioned author thinks that the smallest farms, up to 5 ha, are anti-developmental, whereas those with the area of over 5 ha as pro-developmental (Zegar 2006). 2) cooperation of farm managers with advisory services both state and private ones. The structure of implemented innovations on farms were presented in the paper in the form of a table. The comparative method and the descriptive one were used to interpret the results.

RESULTS

Apart from hard innovations there are also soft innovations in social sciences, the source of which are, for example, the changes in the field of work organization and management. In technology and natural sciences there are hard or objectified innovations (new machines, tools, improved plant varieties and breeds of animals). The introduction of hard innovations often triggers soft innovations, which is defined as mixed innovations, which include, for instance, technical and organizational changes (Zajączkowski 2003). The innovations introduced by farmers were classified in three groups. The first group includes innovations which refer to plant production and they made up 6 types (table 2). The second group shows innovations in livestock production of which 9 types were marked (table 3), and in the last group there were 12 types of general farm innovations in the scope of economics of agricultural production and organization of farms. Table 1 presents the innovation groups and the indication structure of new implemented solutions in the studied farms.

Table 1:
Innovation groups implemented in the studied farms from 2015 to 2016 and the number of indications

| Innovation group | Number of indications of innovations | Indication structure of innovations (%) |
|--|---|--|
| Innovations in plant production | 25 | 13,0 |
| Innovations in livestock production | 29 | 15,1 |
| General farm innovations | 138 | 71,9 |
| Total | 192 | 100,0 |

Source: own elaboration

The carried out research found out that 100 of the studied farms implemented 27 various innovative solutions in the processes of agricultural production. The innovations classified in the group of general farm innovations were the most essential for the studied farms in the group of adopted innovations, which made up almost 72% of all indications of the respondents in the scope of new solutions. Table 2 depicts the types of innovations implemented on farms with plant production.

Table 2:
Types of innovations in plant production

| No. | Specification | Number of innovations | Innovation structure (%) |
|--------------|--|-----------------------|--------------------------|
| 1. | New fertilizers and plant protection products | 2 | 8,0 |
| 2. | New species and varieties of arable crops | 2 | 8,0 |
| 3. | New technologies | 4 | 16,0 |
| 4. | Purchase of machines and tools for plant production | 6 | 24,0 |
| 5. | Analysis of soils | 6 | 24,0 |
| 6. | Certified seed | 5 | 20,0 |
| 7. | Decrease in the area of permanent grassland for the benefit of arable land | - | - |
| Total | | 25 | 100,00 |

Source: own elaboration

Six different innovative solutions were indicated on farms with plant production. The innovation implemented in the processes of plant production mostly referred to the purchase of machines and tools for this type of agricultural production ex aequo with the analysis of soils (24.0% each in this group of innovations). Certified seed (20.0%) and new technologies in plant production (16.0%) were used more seldom. New fertilizers and plant production products as well as new species and varieties of arable crops had the same number of indications in the group of 65 studied farms. Table 3 depicts the types of innovations implemented on farms with livestock production.

Table 3:
Types of innovations in livestock production

| No. | Specification | Number of innovations | Innovation structure (%) |
|-----|------------------------------------|-----------------------|--------------------------|
| 1. | Increase in the cattle population | 6 | 20,7 |
| 2. | Increase in the pig population | 2 | 6,9 |
| 3. | Modernization of livestock housing | 5 | 17,3 |
| 4. | Construction of livestock housing | 3 | 10,3 |

| | | | |
|--------------|---|----|-------|
| 5. | Increase in animal welfare | 3 | 10,3 |
| 6. | Installation of new machines and devices | 2 | 6,9 |
| 7. | New species and animal breeds | 1 | 3,4 |
| 8. | Changes in animal nutrition | 3 | 10,3 |
| 9. | Purchase of breeding animals | 4 | 13,9 |
| Total | | 29 | 100,0 |

Source: own elaboration

In the group of 9 types of innovations referring livestock production the most frequent solution implemented by the studied group of 35 respondents was the increase in the cattle population. Modernization of livestock housing was the second innovative solution (17.3% in the group of this type of innovations). The purchase of breeding animals was the third crucial way of innovativeness in livestock production (13.9%). The construction of livestock housing, the increase in animal welfare and the changes in animal nutrition reached the same number in the group of innovative solutions referring livestock production (10.3% each). The increase in the pig population and the installation of new machines and devices were the equally frequently applied innovative solution on the studied farms (6.9%). The solution concerning new species and animal breeds was most seldom applied by farmers. The innovative solutions in the field of organization and management of farms were most often used in the studied farms. The use of the Union funding under the action "Setting up young farmers" was characteristic of 65 farmers (the share of 47.1% in the structure of the indications of the general farm innovations). Keeping own accounts and the use of the credit offer as a foreign form of funding an agricultural activity were important solutions (10.8% each). Purchasing lands and getting engaged in the group activity by the farmers were the most seldom chosen innovative solution in this group of novelties (1.4% each). The sources of information about the novelties play a key role in the diffusion process of innovations. The media were an significant information channel for 70% of young farmers covered by the research. A little over 20% of agricultural producers read specialized literature. The internet is very popular among young agricultural producers (70% of the respondents). According to the research, the rural environment also affects the implementation of innovations, including the closest surrounding and family. Contacts with other farmers, exchange of experience and opinions influence the diffusion of innovations positively. The importance source of information for young agricultural producers in the scope of agricultural production are the entities from the agricultural circles, mainly including the Agricultural Advisory Centres, private advisory companies and a circle of supply for agriculture. While implementing an innovation, 20% of the questioned farmers benefited from agricultural consulting. Shows and specialist trainings organized mainly by the Agricultural Advisory Centres greatly influence the acquisition of agricultural knowledge. Almost 70% of farmers covered by the research participated in this type of educational form. As much as 98% of the questioned farmers answered that they are interested in the results of research which could contribute to development of their farm. The done research showed lack of the young farmers' common interest in integration. Only 2 young farmers belong to the group of agricultural producers. Therefore, the groups of producers occurred to be the least

appreciated source of information about innovations, and thus a possibility to cooperate within the producers' groups was not noticed. It seems necessary to create farmers' appropriate attitude towards the association in this type of organizations. The creation of the culture of innovativeness seems to be essential in the innovative activity of farms, especially young farmers' one. Young farmers more and more often benefit from Union funding, especially from the Rural Development Programme. Sixty-five agricultural producers profited from the action "Setting up young farmers" under the Rural Development Programme 2007-13. The conducted analysis shows that their share in the funding structure of innovative solutions is high (47.2%). This funding is a refund, thus as many as 15 questioned farmers had to take a bank loan. The size of the cultivated area generally decides on developmental possibilities of a farm. As expected, the farm considered as a non-developmental one had on average the agricultural smaller area (15.02 ha of an agricultural area) than a developmental farm, which was on average by about 10 ha of an agricultural area bigger (24.9 ha of an agricultural area). The analysis of the data proved that the smaller area of the farms became, the bigger share of the non-developmental farms was. Considering development of the young farmers' farms, capital resources are vital. The agricultural income significantly informs about the economic situation. Work on the farm is a basic source of income in most studied farms (95% of the respondents). The opinion of the owners of the studied farms on the appropriate directions of agricultural financing from the budget of the EU in the future periods of programming of the Rural Development Programme is explicit. All the questioned young producers believe that the previous forms of the EU financial support should be continued.

CONCLUSIONS

1. Young agricultural producers, up to 40 years old, implemented 27 various types of innovations on their farms from 2015 to 2016. The most frequently applied solutions were the types of innovations with regard to organization and management of a farm.
2. The main source of financing the young farmers' innovative activity was the Rural Development Programme. Sixty-five agricultural producers profited from the action "Setting up young farmers" under the Rural Development Programme 2007-13. The conducted analysis shows that their share in the structure of innovative solutions is high (33.8%).
3. The farms with livestock production benefited from the innovative solutions more willingly (29 solutions on 35 farms) than the farms with plant production (25 solutions on 65 farms). Nonetheless, it could be considered that the share of agricultural innovations in terms of plant and livestock production was similar.
4. The Internet (70% of the questioned young farmers) and the Agricultural Advisory Centres (20%) constituted the most used sources of information with new solutions.
5. The owners of the developmental farms believed that the previous forms of the EU financial support should be continued.

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FREE TIME RESOURCES AND ITS USE BY STUDENTS – SELECTED STUDY RESULTS

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ABSTRACT

The aim of the study is to analyze the structure of free time and how it is used by students under survey, and to show the diversity in spending free time, depending on the gender of the respondents. Students are a social group that thanks to their young age and energy can become a factor of social change and influence the transformation of entire society or region. The basic method of collecting the research material was a diagnostic survey, in which the author's own questionnaire was used. The survey was carried out in March 2018 on a sample of 267 students. The students turned out to be a very diverse social group, so it's impossible to talk about any group-specific way of using leisure time. There are, however, clear differences in the ways of spending leisure time related to gender. Leisure of young male students was clearly dominated by the use of computer and the Internet.

Keywords: *free time, forms of leisure time use, own research.*

INTRODUCTION

In the tradition of neoclassical economics, most theoretical and research works dedicated to the use of labor resources expressed time focusing on the dichotomous division of real time between working time and remaining time. Effectively examining the optimization of the exchange between time of paid work and aggregated remaining time, these works analyze, more closely, the economic benefits for the employee and the labor market resulting from the time spent on work. The aggregated remaining time is understood as the time dedicated to all other uses and includes free time as a subset of the remaining time [Causa, 2008].

The research on time budgets of the population shows that the amount of time dedicated to leisure is gradually increasing [Kolny 2016; Roettke 2017]. The availability of this time is not the result of an individual decision, but primarily a product of economic and social changes. The research carried out by OECD indicate that currently a full-time employee has an average of 62% of the time a day, which is not intended for paid work, i.e. it is almost 15 hours a day. In Poland, the amount of such time is lower, on average it is 60% of the day time, what translates to 14.4 hours. It is 2 hours shorter than in France, where full-time employees have the longest time out of work, compared to 38 countries under studies. This time is spent on personal care (food and its preparation, other household activities, sleeping, etc.) and leisure time and recreation (social meetings with family and friends, hobbies, games, computer and television, etc.) [OECD, 2017].

The use of time free from work affects many areas of family, personal and professional life, and on the macro scale it translates into economic and social processes. Therefore, it seems very important to acquire knowledge about managing this part of real time by different groups of people defined by

gender, professional status, family status, age or standard of education. The analysis of how this time is spent by the groups defined in this way provides information on their preferences, values and attitudes towards important economic and social issues. The subject of research in this study is the management of free time of a selected group of people - full-time students. Students are a social group that, thanks to its youth and dynamics, can become a factor of economic and social changes, influencing transformation within the whole society or in a region. Thus it is significant to explore the ways of spending free time by this group of people. The objective of the study is to analyze the structure of free time and how it is used by students under survey, and to show the diversity in spending free time, depending on the gender of the respondents. The study has been divided into three parts. The first one is dedicated to the explanation of the concept of free time and its importance for the individual and society. In the second one, the research methodology and the group of respondents is characterized. The third part includes the analysis of the results of own surveys. Achieving this objective allowed to answer the following research questions:

1. What portion of the students' time budget is their free time and in what form do they mostly prefer to spend it?
2. For what forms of spending free time students would like to have more time?
3. For what forms of spending free time students allocate the most financial resources?

THE NATURE OF FREE TIME – THEORY

Total time is our main non-renewable resource, and in today's cultural conditions it is also a scarce commodity [Klein, 2009: 4]. However, very often we ignore its economic value, especially when it comes to free time. This is visible even if we use the classic measures of economic activity, such as GDP or GNP. The fact that they do not consider free time is raised as one of the objections to these macroeconomic aggregates [Stiglitz, Sen, Fitoussi, 2009].

Both working time and time off work bring benefits. According to the Work-Life Balance concept, the amount of time a person spends at work, and therefore also outside of it, is an important aspect of the balance between work and private life. Extending the time spent on work may harm personal health, threaten safety and increase stress, and the quantity and quality of free time is important to the general well-being of people and their families and may bring additional physical and psychological benefits [Warren 2015]. In modern scientific research, conducted also within the framework of sociology, psychology and philosophy, real time resources and their use are treated as a basic determinant of quality of life not only in the individual but also in the social dimension [Czaja 2011]. The conclusions from these studies show that the successes of human individuals, enterprises as well as socio-economic development and the well-being of entire communities depend on the division of the time resources into working time and the time allocated to other activities, as well as the ways of their various use.

Free time, often combined with the private sphere of the individual's life, has long been not considered as area of detailed economic studies. Nowadays, however, it is also subjected to a broader research conducted as part of broadly understood social sciences. As L. Dowbor points out, "by thinking about free time as a socio-economic category, we are entering the sphere of a modern vision because it focuses on the final result - the quality of life. From an economic point of view, this means that we give value to both time that is not directly contracted by the employer - and which enterprises consider free, because it costs nothing - and the time allocated to socially useful activities, but not covered by monetary circulation".

Similarly to the working time, free time has its value, and its gradual extension does not have to limit the amount of production in the economy. At the same time, it affects the quality of life, because as Friedman notes, free time is the second, in addition to money, compensation for working time, an element of higher quality and standard of living, and the factor of self-realization [Czaja, 2011, p. 258].

However, defining free time is not a simple matter. MC Burda and others believe that in its pure form it should be understood as "all activities that we cannot pay somebody else to do for us and we do not really have to do at all if we do not wish to" [Burda et al. , 2006, p. 1]. M. Bombol emphasizes that this is time when a person does not perform any obligatory activities or activities and is a natural element of the functioning of an individual, separated from the 24-hour time budget [Bombol 2008]. D. Puciato and T. Szczebak [2011] describe such approach to free time as instrumental, distinguishing next to it the spiritual and behavioral aspect.

In behavioral terms, considerations regarding free time are focused on the issues of undertaking specific activities in this period, which, in consequence, lead to rest. Therefore, according to Cz. and M. Kupisiewicz free time is a period of time after completing tasks resulting from various duties, which a person can use for regeneration of his or her psychological and physical strength, satisfying own interests, leisure time and entertainment [Kupisiewicz, 2009: 25].

The spiritual approach to free time emphasizes the possibility of satisfying the higher needs within the framework of this time, and thus mainly concerns self-development, self-realization and self-improvement. Free time (leisure) in this approach is to serve the realization of autotelic values, to be a value in itself, and not be the basis for achieving material and economic benefits. Therefore, according to M. Jurewicz, the function of free time, beside rest and play, is working upon oneself. This function of leisure refers to the self-improvement of an individual in any field of culture, and includes activities such as comprehensive participation in social life and the development of the individual [Jurewicz, 2009: 508].

According to M. Orłowska, the basis for determining which behaviors are considered free time and which are not is lack of a sense of duty, freedom of choice and its awareness, and free time is the only sphere in the life of a person in which he or she can freely and voluntarily develop, without enforcement from any social life institution [Orłowska 2006: 90]. According to this author [2011: 19], free time is characterized by three specific constitutive attributes. They are voluntariness resulting from autonomy, hedonism understood as the pleasure of spending free time and non-commercialism referring to the immaterial dimension of free time.

However, K. Kwilecki, draws attention to the duality of free time, which means that not only quantitative but also qualitative aspects should be taken into account. The quantitative aspect can be measured and this is the basis for the analysis of the time budget. In contrast, the quality aspect of free time is the quality of life. The amount of time and the ways of its use affect the quality of work, professional education and development, everyday well-being and health, which is the quality of life. A man guided by the conviction of a high value of free time organizes his professional activity and school education to create a relatively large pool of free time, and education to be effective should cover all spheres of human life activity, including his or her free time [Kwilecki 2011, pp. 9-10].

RESEARCH METHODOLOGY AND THE RESEARCH SAMPLE CHARACTERISTICS

Studies on the use of real time are referred to as the time budget management studies, which should be understood as a compilation of the time intervals for various life activities [Feet 2008]. In the studies on the time budgets, attention is focused on the quantitative measurement of units of time dedicated to various types of daily activities, and therefore time is treated instrumentally as a synthetic, easily empirically available measure of complex social phenomena. However, the validity of a particular activity cannot be assessed only on the basis of the amount of time allocated, as limiting to quantitative analysis makes that many important phenomena of social and economic life related to time are left aside [Gardocka-Jałowicz, 2017]. Despite that being said, it should be stated

that time budget studies provide information on many aspects of life, including the distribution of time used in various spheres of life. They provide information on how the organization of the time of the population changes in relation to the changes taking place in the economy and social life, and yet this is an important, practically useful and interesting knowledge about social and economic reality [Kolny 2016; Gardocka-Jałowiec, 2017].

In Poland, such studies are carried out by the Central Statistical Office which applies the direct interview method with paper questionnaires. Obtained answers allow determining the structure of the daily time budget, developed on the basis of the index of the duration of activities over a day in the human life cycle. This cycle is changing along with the following stages and accepted social roles - from the youthful school years, through the adult - parent and employee to a pensioner [CSO 2016, p. 17]. Each of these stages is characterized by different needs, reflected in the type and intensity of activities performed. The time that the unit has at its disposal within 24 hours is divided into 10 main groups of activities, i.e. [CSO 2016]:

1. satisfying physiological needs (for instance sleeping, eating, time for personal hygiene etc.),
1. professional work,
2. learning (at school and at university),
3. housework,
4. voluntary work in organizations,
5. using the mass media (e.g. watching TV, listening to the radio),
6. social life (e.g. social meetings, cinema, cultural events),
7. personal passions (e.g. computer and Internet, hobbies)
8. participation in sport and recreation,
9. commuting.

In the study on the time budget, activities classified to groups 6 to 9, i.e. the use of mass media, social life, personal passions and sport or recreation are considered to be decided by an individual and constitute its free time (leisure time).

Our own studies, which results are analyzed in this paper, were carried out in March 2018, and the basic method of collecting research material was a diagnostic survey with the use of questionnaire developed by the author. In addition to questions regarding the characteristics of the surveyed population, the questionnaire included 4 questions regarding: the division of day time into various forms of students' activity on a weekdays and free day, the most popular form of spending free time, the form of spending free time associated with the largest expenses, as well as forms of free time use, for which students have no time. The survey mainly addressed the quantitative aspects of students' free time, considering the qualitative aspect marginally. The study includes selected results of the conducted surveys.

The research sample consisted of 267 people, students of the first and second year of full-time first-cycle studies at two Polish universities - 123 students of the Wrocław University of Economics, Faculty of Economics, Management and Tourism in Jelenia Góra (UEW) and 144 students of the University of Szczecin, Faculty of Economics and Management (US). While making the analysis, in order to capture possible differences in the obtained results, the division of the surveyed students into these two research groups was taken into account. Other characteristics of the research group are presented in Table 1. The structure of respondents by gender and source of income may be important in relation to the diversity of their free time use. However, due to requirements concerning the volume of the article, the analysis of the forms of spending free time by respondents carried out in the third part, will only take into account the gender criterion.

Table 1: Characteristics of the test sample

Source: own study based on research results.

| Specification | Research sample in total | UEW | | US | |
|---------------------------|--------------------------|---------------------|-------------------|---------------------|-------------------|
| | | The number of women | The number of men | The number of women | The number of men |
| Number of respondents | 267 | 79 | 44 | 80 | 64 |
| Dependent only on parents | 142 | 45 | 14 | 54 | 29 |
| Working for own living | 26 | 7 | 4 | 6 | 9 |

Assessment of the structure of academic youth carried out by gender showed that women (59.5%) represented the main portion while men were only 40.5% of the surveyed population. Among students of the Wrocław University of Economics (UEW), women were predominant, and represented 64% of the students surveyed there. Among the students of the University of Szczecin (US), the share of women was lower and amounted to 56% of surveyed population.

In the total research sample, students dependent on parents (53.2%) prevailed, where the share of this group of students amounted to 58% of the surveyed students of US and in case of UEW students the share was 10 p.p. lower. Those working for own living represented only 9.7% of all respondents (10.4% of the US and 8.9% of the UEW). Students supported by their parents and working professionally, represent 37.1% of all respondents, while those who are working professionally represented 43.1% respondents of the UEW and only 31.9% respondents of the US students.

Large diversity of students in terms of source of income occurs due to gender. Women are definitely more often supported by their parents - in Szczecin, their share was 67.5% of the women surveyed there, and at the UEW they represented 56.9% of respondents. The share of men who were solely dependent on their parents was also higher at the US and amounted to 45.3% of men surveyed there and 31.8% in case of UE. In Jelenia Góra, 34.1% of the surveyed women and 59.1% of the surveyed men was working professionally, whereas in Szczecin this percentage was definitely lower and amounts to 25.0% and 40.6%, respectively.

THE FORMS OF SPENDING FREE TIME –ANALYSIS OF THE RESULTS OF OWN STUDIES

Although the influence of source of income on the forms of spending free time by respondents will be the subject of a separate study, it should already be pointed out that the analysis of the respondents' source of income structure shows that surveyed UEW students were more likely to work professionally and therefore they should have less time to spent on other activities. To some extent, this is confirmed by the results of the carried out studies, which show that on average, a UEW student spent 2 hours in a weekday and 3 hours in a day off work, and the average UE student 1 and 2 hours, respectively. However, one should remember that free time of the youth is time that the student has after satisfying the physiological needs (sleep, meals, hygienic activities), after student's and professional duties and duties resulting from the role of a family member are fulfilled. After deducting the time intervals spent on the mentioned activities, free time of UEW students on a weekday was 5 hours, and US students 7 hours. In both groups of students free time during a day off was in average the same, i.e.7 hours.

The manner in which free time is used determines equally personal attitudes and tastes as well as real life conditions: time, means, content and nature of the work [Kwilecki, 2011, p. 11]. In the case of students, the specificity of the studies is also important, but all respondents in the analyzed studies are students of economic faculties. However, the conducted research shows, that in relation to some forms of spending free time the gender of respondents (Figure 1) is also very important. In

both groups, women spent their free time more often with family and friends than men. The share of men choosing this form of spending free time is around 20 p.p. lower than the share of women in both groups. At the same time, also more women than men in both groups surveyed said that they do not have time to spend with family and friends (Figure 2). However, the differences between men and women are not so big anymore, because men who do not have time to spend with family and friends are only about 2 p.p. less than women.

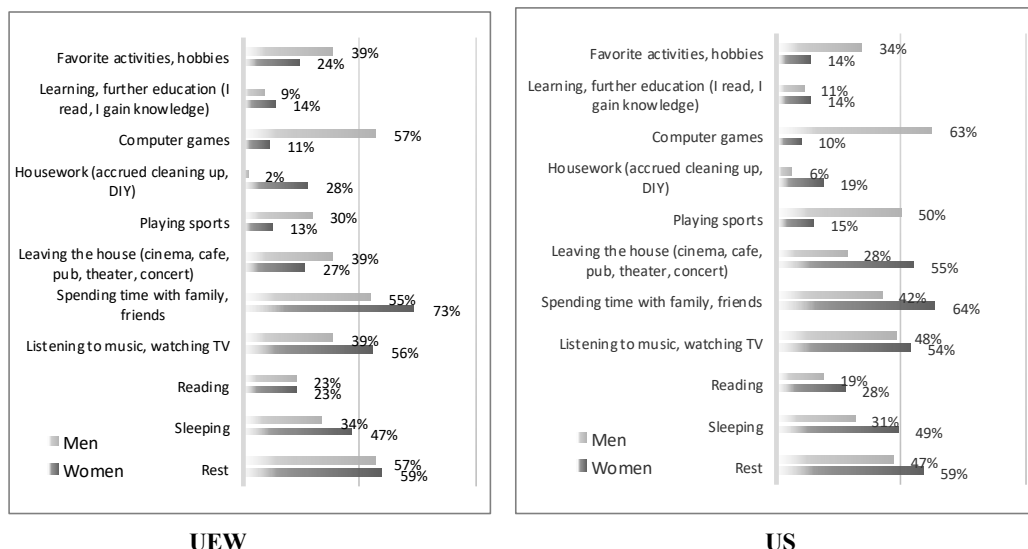


Figure 1. The forms of spending free time by the surveyed students.
 Source: own study based on research results.

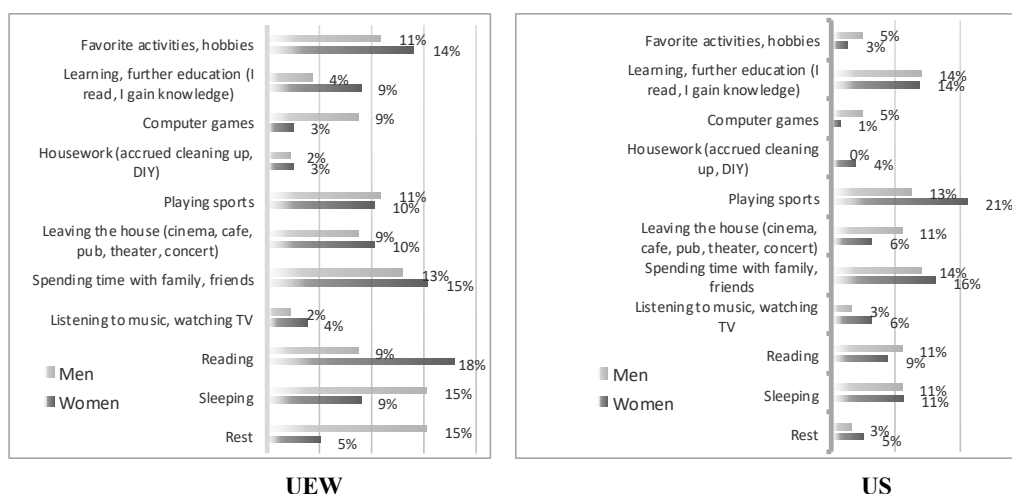


Figure 2. Forms of spending free time, for which respondents have no time.
 Source: own study based on research results.

Women more often than men spend their free time on accrued housework. Among respondents at the UEW their share was by 26 percentage points higher than men, and at the US by 13 p.p. higher. At the same time, 3-4% of women surveyed at both universities indicate on lack of time for these activities, and in the case of men there are 2% of them at the UEW and no men was missing these

activities. In some way, this may indicate on the traditional division of roles of housekeeping duties between the genders.

In both studied groups of students women spent their free time on sports and computer games less often than men. Among the surveyed women, the share of those spending their free time on sports was at the UEW by 17 pp. smaller than the share of men. And at the US the difference was 35 p.p. and at this university the share of female students declaring lack of time for sports was about 7 p.p. greater than the share of men (Figure 2). A higher percentage of men than women in both groups also declare to spend the most money on sport - at the UEW this share is 14%, and at the US it was by 13 percentage points higher (Figure 3). The share of women spending their free time on computer games at the UEW was over 5 times, and at the US more than 6 times lower than the percentage of men. At the same time, three times more surveyed men than women at UEW and 5 times more at the US indicated that they have no time for computer games (Figure 2).

At both universities, a slightly different situation was noticed in terms of gender in the case of spending free time to go to the cinema, theater, pub or concert. In the UEW, the percentage of men who prefer this form of spending free time was 12 p.p. greater than the percentage of women, and at the US the situation was reverse - the percentage of women who prefer this form of spending free time was by 27 p.p. greater than the percentage of men.

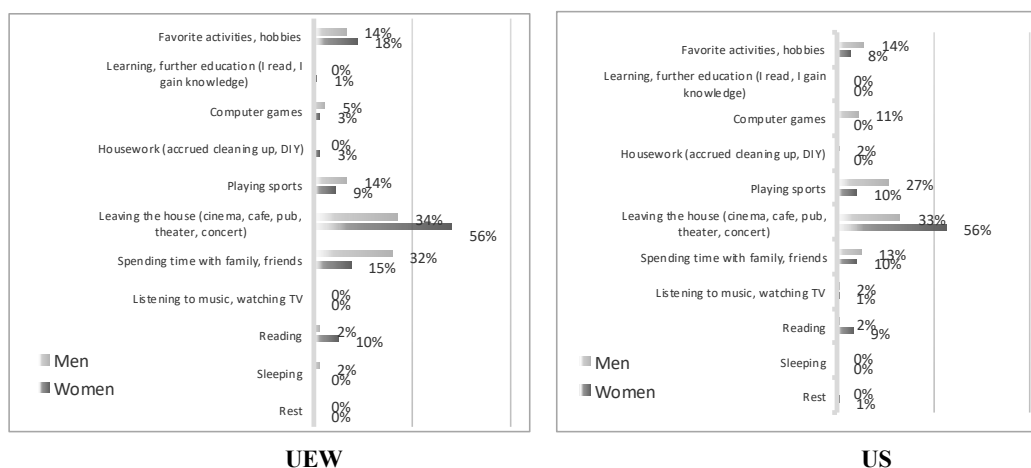


Figure 3. Forms of spending free time, for which the respondents spend the most financial resources.

Source: own study based on research results.

At the same time, the same and very high share of female respondents at both universities (56%) indicates that this form of spending free time allocates the largest amount of financial resources (Figure 3), and the percentage of men was over 20 pp. smaller and differs between universities only by 1 percentage point.

CONCLUSIONS

According to K. Czajkowski [2011: pp. 15, 174], man is an indivisible being, and therefore what he does at his free time has a significant impact on his activity at other hours of the day. The value of free time is, therefore, the result of its content, which is filled and it is of great importance that in free time, many values, habits and preferences of the individual are shaped, which then become important factors in his or her life and development. Therefore, in the summary of the research results analyzed in the article, one should point to two observations that are alarming from a private and social point of view. First of all, no significant differences in the forms of spending free time

between the surveyed students from the two universities were noticed, and larger differences occur due to the gender of the respondents. A large percentage of surveyed men spend their free time playing on the computer. Among the interviewed students, the record holders spent 10-11 hours on the computer on a week day and even 16 hours on the day off. At the same time, it is also worrying that the groups of respondents are not unique in this respect. Research conducted in the United States shows that young men between 21-30 years of age use their free time to play computer games, i.e. recreational use of the computer. These games are for them a kind of luxurious way of spending time, and additionally for the greater part of young men it is the main and only activity during the day. These studies show that while total free time increased in 2004-2015 by only 4%, in 2015 young 21-30-year-old surveyed students spent 5.2 hours per week on computer games, which means compared to 2004 increased by 45%, [Aguira et al. 2017, p. 47]. The problem is so serious that in May 2018 the World Health Organization will publish a new version of the International Classification of Diseases, which as was announced will include the addiction to computer games, as was announced.

Secondly, the research shows that the respondents rarely spend their free time on self-improvement. In the questionnaire, it is described by such leisure activities as reading literature not related to studies and further education. Only 14% of women surveyed at both universities, and 9% of male respondents at the UEW and 11% at the US, spent their free time to studying and acquiring new knowledge. About 7% of respondents from UEW (4% of men and 9% of women) and 14% of respondents of both genders from the US indicated that they have no time. And only 1% of women from the UEW surveyed admit that they spent the most financial resources on education. About 23% of the respondents from both universities spent their free time reading items not related to the studies. 18% of women and half of the percentage of males surveyed at UEW, and 11% of men and 9% of women at the US declared lack of time for this activity. Only 2% of the surveyed men from both groups and 10% (UEW) and 9% (US) female respondents admitted to spend most funds for this free time activity. Therefore, it seems that the surveyed students consider time spent on learning and classes at the university (on average, on a weekday 6 hours respondents from the UEW and 5 hours from the US and 1 hour on a day off) is long enough to spend significant part of free time for self-improvement. And further education, acquiring new knowledge, also outside of formal education, being a part of the process of self-improvement, brings not only individual benefits, but also brings value to the whole society.

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Source of Information on the Perceived Risk and Safety in the Tourism Industry

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ABSTRACT

The aim of the paper is to recognize the source of information on the perceived risk and safety in the tourism sector and to create a model, a set of such sources of information that should be used in conducting national empirical research and international comparisons. The authors carried out an analysis of corresponding sources in the field of concept of safety and security, risk and source of information on the perceived risk in tourism. Research results indicate that three sets of information sources should be examined: commercial, non-commercial, government and economic factors, gender and age. Besides we can suppose that tourists in the countries of concern are susceptible to the anchoring effect.

Keywords: *tourism, risk perceived, source of information, tourist safety.*

INTRODUCTION

At the end of the 20th century, researchers noticed that the emergence of tourist fears was affected by a number of factors, such as experience of terrorist attacks, conflict proximity, tourist destination negative image, etc. (Sönmez & Graefe, 1998). Tourists would often face cultural, economical, financial, natural, political and other threats. Lack of knowledge about these factors creates a risk. These risks and threats may be encountered both directly and indirectly (by receiving information from different information sources). Researchers agree that the key role is performed by the mass media which influences the development of the risk perceived by tourists. In this way, unsecure tourism destinations might gradually lose their competitive advantages (Payam, 2016) as some tourists might refuse travelling to “dangerous destinations”, which, in turn, has a direct negative impact on countries’ revenues. The role of the tourism sector in the world economy is growing, so scientists started monitoring all factors which affect its development and perception of risk by tourists. In the era of migration processes in the last decade, the increase of the terrorist threat, global financial and economic crises and the large role of the media, it seems that tourists may perceive risk and safety in tourism in a different way. In addition, it can be assumed that nowadays other sources of information may be important for tourists than a few decades ago. Therefore, it is

important to conduct research in this area and identify sources of information that should be subject to such research.

The aim of the paper is to recognize the sources of information on the perceived risk and safety in the tourism sector and to create a model, a set of such sources of information that should be used in conducting national empirical research and international comparisons. This is relevant in the context of increased risk, in particular, in Europe and the Middle East, in which tourists are more sensitive to received information and tend to look for this type of information before travelling.

Perceived risk and tourist safety

It should be noted that in relation to the tourism sector, the most significant impact is the systematic risk and those related to political and macroeconomic factors within it.

Kóvári and Zimányi (2011, p. 60) hold the view that "security and safety has become a complex multi-dimensional notion with a wide range of components belonging to it: political security, public safety, health and sanitation, personal data safety, legal protection of tourists, consumer protection, safety in communication, disaster protection, environmental security, getting authentic information, quality assurance of services etc.". The issue of safety is particularly sore in tourism (e.g., the increased risk of terrorism and war, political unrest, etc.) because this has a direct impact on the choice of destination (Artuđer, 2015; Repnik & Mekinc, 2015). Since tourists choose not only those tourism destinations which correspond to their expectations, needs and price but also those which are known for their low risk (Artuđer, 2015).

Since the end of the 20th century a considerable amount of research has been carried out which aimed at identifying the main risks that are incurred/might be faced by tourists. Artuđer (2015) groups the risks into the following categories: cultural, equipment/functional, financial, health, physical, political, psychological, satisfaction, social, missing flights and detonating explosives, biological attacks and time related risks. Exposure to such risks or experience of having faced them during travels as well as having suffered damages or health injuries might have an effect on subsequent tourists' experiences (Jahari & Teng, 2012). Such tourists, in particular, might refuse travelling abroad and choose domestic travelling or devote much more time for the issues of security (e.g., look for information on potential threats and risks in a specific region of tourism).

The two last decades contained a number of different emergencies which have affected the perception of risk by tourists (Jahari & Teng, 2012). A modern tourist perceives the word "risk" by associating it with something dangerous or negative (Yağmur & Doğan, 2017). However, it should be noted that the risk means the estimated uncertainty of achieving a given result. It can therefore have positive or negative effects. However, risk perception is influenced by emotions and state of the perceiver. As indicated by Lerner and Keltner (2000) according to the valence theory of risk perception, the positive or negative perception of risk depends on whether the perceiver's emotions are positive or negative. However, most often events in the world or in everyday life cause them a pessimistic risk view. In tourism the risk is seen as something that might directly affect his/her health, life and property. In Schroeder, Pennington-Gray, Kaplanidou and Zhan's (2013) opinion, tourists often already have certain stereotypes about certain tourism regions, economic situation and the level of security in them (e.g., Asia and North America as destinations with a high risk of natural disasters, Africa, South America, the Middle East and Asia are perceived by health-related risks). Nevertheless, not all countries which belong to a certain region of tourism entail the same level of risk. Sometimes the threats and risks of one country are automatically attributed to some other countries in which the exposure of risk is actually much lower.

In their studies, researchers have raised questions of how much the events of recent years have affected the risk perceived by tourists as well as their choice of destinations. Research has revealed that the frequency of occurrence of crises and threats might have a two-fold effect. Since tourists might decide to refuse to travel due to the increase in threats and risks and this, in turn, might negatively affect a country's revenue, some other tourists might see the prices of tourism products reducing and avail of such opportunities for travelling.

Naturally, a question arises, whether there is any tourist resistance to crises? Research carried out has revealed that crisis-resistance in tourists exists (Hajibaba, Gretzel, Leisch & Dolnicar, 2015). The risk perceived by tourists might be influenced by the following factors: demographic (age, gender, nationality), travel experience, prior experience with risk, travel motivation and novelty preference (Yang, Sharif & Khoo-Lattimore, 2015, p. 20).

The data of the study conducted by Hajibaba et al. (2015) shows that resistance to crises (physical, financial and social) which are faced outside the borders of one's homeland (external crisis-resistant) is stronger in young tourists, meanwhile, older tourists are more resistant to domestic risks (internal crisis-resistant) (Hajibaba et al. 2015). Some degree of resistance and perceived risk develop gradually with the accumulation of travel experiences. Having visited dangerous tourism regions such tourists are usually more likely to choose similar destinations (Kozak, Crotts & Law, 2007).

The reasons and goals of travelling might also affect the perception of risk. It should be emphasised that tourists who travel for the purpose of business are more resistant to potential risks (as research revealed, in case of occurrence of an emergency, more than a half of respondents said that they would not cancel their travels and would nevertheless try to reach their target destination) (Floyd, Gibson, Pennington-Gray & Thap, 2004). Whereas recreational tourists are not likely to cancel their travels but rather choose “safer” destinations or travel within their country (Floyd et al., 2004). Researchers highlight a category of tourists whose motives for travelling are adrenalin, challenges and risks (Amara & El Samadicy Ragheb, 2012); for this reason, the frequency of recurrence of risks and threats might even prompt them to travel (e.g., war tourism, slum tourism, etc.). They might also find such situations as a perfect way for travelling more remote areas and in a cheaper way.

Perceived risk may also depend on other facts. The study conducted by Reisinger and Mavondo (2005) has unveiled that the perception of travel risk is also affected by cultural and psychological factors (the following criteria were analysed: their cultural orientation, personality, lifestyle, travel motivation, risk and safety perception, anxiety, and intentions to travel). To add, the researchers tried to find a correlation between the perceived risk and nationality. Research carried out by Garg (2015) showed that there is a connection between the nationality of tourists (their mind-set/mental outlook, values and cultural differences) and their attitude towards security and decision to travel to less safe regions. Yağmur and Doğan (2017) conducted a research in Antalya (this destination is mostly chosen by German and Russian tourists) the purpose of which was to examine the destination risk perceptions of German tourists about Turkey (to conduct the research the destination risk perceptions scale (DRS) was used – it includes 5 dimensions, namely, physical risk perception, financial risk perception, performance risk perception, socio-psychological perception and time risk perceptions). In addition, Arias - Febles (2016) chose tourists from Germany and Great Britain, who arrived to Gran Canaria, for their object of research and noticed significant differences in tourists' perception of risk.

However, everything related to crisis situations and tourists is full of emotions (Lehto, Douglas & Park, 2008); for this reason, more varied approaches of research have to be searched for so as to determine their impact on the development of perceived risk (neuro-tourism methods) as well as for methods to enable “real time” analysis of factors and emotions.

In summary, it is evident that the reduced security of tourism destinations has a direct effect on the choices of travels by tourists. Every emergency results in some tourists abandoning their travel plan or changing it. Emergencies often have a long-term effect and create the atmosphere of “distrust” in tourism regions. It is difficult to identify patterns that would be typical of all tourists since one disaster resulting in a number of fatalities in terms of tourists might have a longterm negative economic impact on a tourist location (e.g., the case of Bali). Therefore, persons responsible for the expansion of the tourism industry must necessarily provide tourists with concentrated, reliable and easily accessible information to make sure that everyone could find and use it for their own needs.

Source of information on the perceived risk in tourism

Researchers wonder, where tourists receive information about security of a tourism destination and whether they are interested in such information on the whole. Garg and Kumar (2017) claim that the process of decision-making by tourists is influenced by the level of their risk perception. Some researchers hold the view that tourists, who look for adventure, most often do not search for any information on safety (Murphy, Mascardo & Benckendorff, 2007). Due to the internet tourists have become more independent and are able to find information on their own (internet, social networks, etc.) (Hernández-Méndez, Muñoz-Leiva & Sánchez-Fernández, 2015). Roehlo and Fesenmaier (1992) state that the level of risk perception affects the amount of information since the process of information search is considered to be the risk reducing strategy. Research has revealed that the higher the danger is perceived, the more information is looked for by tourists and the more rational decisions are made (Amara & El Samadicy Ragheb, 2012). Garg and Kumar (2017, p. 147) note that “the extent of the information search may depend on past travel experience, risk perception, travel anxiety, and the importance and purposes of the travel”.

Fodness and Murray (1999) and Hernández-Méndez et al. (2015) have developed an information search model which has been supplemented by the authors of the article by a new dimension which includes government-monitored sources.

Table 1: Sources of information used in tourism

Source: based on Fodness & Murray, 1999; Hernández-Méndez et al., 2015; Pennington-Grey & Schroeder, 2013.

| Source of information | Type of information | |
|-----------------------|---|--|
| | Impersonal | Personal |
| Commercial | Brochures, Travel guides, Local tourist offices, television | Clubs, Travel agencies, Internet |
| Non-commercial | Magazines, Newspapers | Friends, relatives and family, Personal experience |
| Government | Information on the website of the Ministry of Foreign Affairs; opinion of tourism and security experts; consulate embassy | Mobile application (state) |

Pennington-Grey and Schroeder (2013, p. 10) have identified the sources which might be referred to by tourists while looking for information in the event of occurrence of a crisis situation, namely, local law enforcement/police, friends/relatives, Internet, hotel concierge, television, text messages, consulate general/embassy, travel agents, local residents, other tourists, state tourism office (STO), local tourism office (CVB), newspaper, radio. It should be emphasised that mobile applications have become an increasingly popular source of information since they provide tourists with a possibility to establish a connection and to receive the required information (Hernández-Méndez et al., 2015).

One more source of information examined by researchers is feedback on destinations and safety level from relatives and friends (experience of previous travels). However, this is quite a subjective and non-reliable source. As Murphy, Mascardo and Benckendorff (2007, p. 517) put it, “friends and relatives have been identified as organic image-formation agents, and it has been emphasized that this WOM (ed. - word-of-mouth) information is one of the most relied-upon sources of information for destination selection”.

A more reliable source of information would be recommendations given by the staff of tourism agencies. According to Heung (2003), tourists can get more detailed information and pose all

questions they have directly. People working in tourist information centres most probably have adequate education and more information on dangerous tourism destinations. They need this knowledge since they are partially responsible for the safety of tourists and in case of dangerous situations they must properly coordinate them. Nevertheless, as noted by Heung (2003), tourists often rule out this source of information due to the lack of time.

Researchers agree that the main source of information which has an effect on the risk perceived by tourists is mass media (Garg, 2015). It affects tourists' world-view, development of their fears and decision-making (Amara & El Samadicy Ragheb, 2012). A study conducted in Iran by Ghasemi, Jalalabadi, Poormoosavi and No (2014) demonstrated that Western mass media may create the image of a dangerous region, and tourists may refuse choosing a particular direction based on the information they are provided. Amara and El Samadicy Ragheb (2012, p. 5) also claim that mass media “has a significant influence on the image of potential tourist destinations and so affect[ing]s potential tourist's destination choice.” Other researchers have also analysed these links. For instance, Pennington-Grey and Schroeder (2013) studied the role of social mass media in the event of a crisis while traveling, Kapuscinski (2014) examined the impact of mass media on the perception of risk by tourists and their will to travel, including the increased risk of terrorism and political instability. Seabra, Dolnicar, Abrantes and Kastenholz (2013) emphasise that each of us face terrorism indirectly via mass media. The main information received from mass media includes: details about the most dangerous destinations, terrorist groups, locations of terrorist attacks and devices used; the number of fatalities (including tourists) and economic damage (including the destroyed tourism infrastructure). However, there is lack of information on the long-term impact of such emergencies on tourism destinations; besides, there is little information on their secondary effect (e.g., dismissals, reducing number of tourists, lower revenue, etc.) (Survila, Mikėnas & Žuromskaitė, 2017).

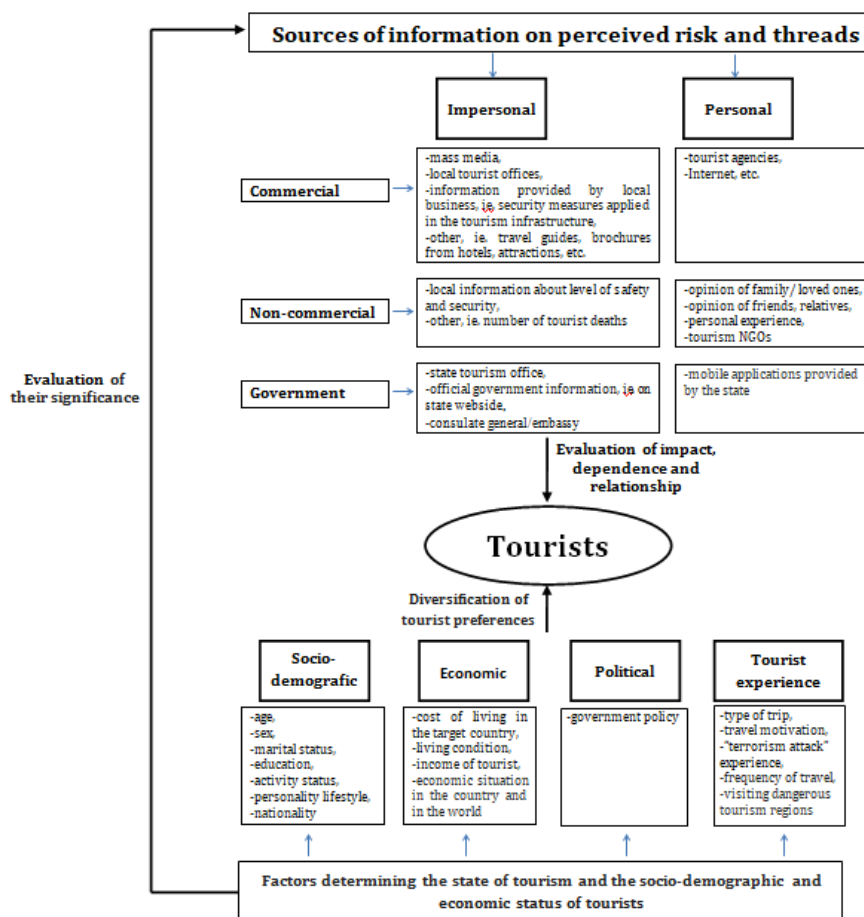


Figure 1: Evaluation model of information sources on the perceived risk and safety in the tourism industry

The authors of the paper selected the most important sources of information on the perceived risk and safety in the tourism sector for which empirical research of their significance should be conducted. A proposal for such a research model is presented in Figure 1. It was found that the impact of sources of information on the perception of tourists can take place not only in a direct way. Socio-demographic and economic factors can also be important. These factors not only characterize the type of tourist, but it should be noted that depending on the type of tourist, the impact of information sources on tourism preferences may change. For this reason, the assessment of the significance of information sources in the tourism sector should also take into account the factors proposed in the model.

CONCLUSIONS

Theoretical research conducted in this paper indicates that there are many factors that cause differentiation in tourists preferences of information sources on the perceived risk and safety in the tourism sector. We have distinguished two groups of such information sources: impersonal and personal, called word-of-mouth. Among them, there are significant sources generated by state institutions, which are verified and usually fully credible, commercial information, which are often provided by entities directly involved in tourism and non-commercial information sources, which are usually informal information. All of them, depending on the type of tourist, may exert a greater

or lesser influence on decisions made by tourists. The analysis of scientific papers indicates that tourists differ depending on their country of origin and experience, resulting in the fact that the assessment of these sources of information requires a statistical verification based on the collected empirical data. Such an empirical analysis based on the model proposed in the paper should help to verify which sources of information on travel safety are used by tourists. This will also help to observe regularities and differences between tourists and to make use of appropriate sources of information transfer in the future.

The analysis carried out in the paper indicates that there is a need for further research in this area to verify further emerging hypotheses.

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Measurement Issues in Poverty Analysis - Methodological Problems

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ABSTRACT

Poverty is an intrinsic element of social and economic life in many countries in Europe and worldwide. Counteracting poverty is one of the crucial objectives of the EU social policy. To serve this purpose, relevant programmes are implemented. In order to choose the way how these programmes are to be developed and their effectiveness measured, first of all social groups at risk of poverty need to be identified. This in turn depends on how poverty categories are defined and measured, which is a challenging task due to the complex nature of poverty as such. The article aims to present methodological problems that occur at different stages of the poverty analysis, particularly at the ones focusing on the approach to poverty, the choice of the poverty criteria and line, on determining the equivalence scale and evaluating the incidence of poverty.

Keywords: *Poverty measurement, Poverty analysis.*

INTRODUCTION

Poverty is one of the central issues to be tackled by modern societies. This undesired social phenomenon is still common in Europe, as it has been shown by announced by the European Statistical Office, according to which in 2016 the number of people at risk of poverty in the European Union (EU) reached 17.3%, i.e. over 85 million (Eurostat, 2018). Therefore the reduction of poverty is a central objective of the EU social policy as stated in the *Lisbon Strategy* and in the *Europe 2020 Strategy*. To serve this purpose, relevant programmes aimed at reducing poverty are developed at different levels. In order to choose the way how these programmes are to be developed and their effectiveness measured, i.e. how they will contribute to alleviating the scale of poverty and whether they actually reach those in need, social groups at risk of poverty need to be identified in the first place. This in turn depends on how poverty categories are defined and measured, which is one of the most important elements of the poverty analysis (Rusnak, 2011, 388).

The paper aims to present methodological problems that occur at various stages of the poverty measurement process. The stages concern in particular:

- the approach to the poverty analysis,
- setting the poverty criteria,
- determining the poverty line,
- determining the equivalence scale,
- evaluating the poverty incidence by means of selected poverty measures.

APPROACH TO POVERTY ANALYSIS

What is of key importance to its measurement is how poverty is defined. Depending on the choice of a definition, individuals, families or households can be considered poor or not.

There are plenty of definitions of poverty in the literature. For example, Smith defined poverty as an inability to purchase commodities regarded by the society as indispensably necessary (Smith, 1776, 651-676). In the early 20th century, Rowntree distinguished between primary and secondary poverty. Those in primary poverty did not have enough income to satisfy their basic needs (Rowntree, 1901, quoted in Townsend, 1979, 33). The term of secondary poverty relied on more subjective opinion. The needs of people were not met not because their income was insufficient, but because their money was being spent on things that were not the necessities of life (Laderchi & Saith & Stewart, 2003, 248). Sen believes that low wages are one of the main causes of poverty and their low level may be a principal barrier limiting the capabilities of individuals (Sen, 1983, 69-153). Townsend, another renowned economist, defines poverty as the lack of resources necessary to participate in the activities that constitute the ordinary living patterns in a given society and the exclusion from the average living conditions approved in this society (Townsend, 1979, 88).

The analysis of the aforementioned definitions shows that poverty can be regarded as objective and subjective. In the objective approach the level of meeting the individual needs is evaluated by experts, while in the subjective approach the evaluation is made by the individuals themselves (Panek, 2011, 20-21). Both these approaches distinguish between absolute and the relative poverty (Lok-Dessallien, 2000). The absolute poverty is determined basing on a person's living needs satisfaction level, in isolation from the needs of other members of the society. The relative poverty is defined in relation to the proportion between the level at which the basic human living needs are met and the level at which other society members' needs are satisfied. The main disadvantage of the relative approach is the absence of a fixed reference point that could be used for comparing the changes in poverty over time and space, which makes it difficult to evaluate the effectiveness of programmes to combat poverty (Panek & Zwierzchowski, 2013).

SETTING POVERTY CRITERIA

Another important question to be addressed in the poverty analysis is how to determine the poverty criteria. In the 1970s in the studies on poverty the classical approach prevailed, that was primarily based on monetary criteria. In the classical approach the poverty level is defined on the basis of income (spending) expressed in monetary terms. The most common monetary poverty indices include: Headcount Ratio, Poverty Gap Index, Watts Index, Sen-Shorrocks-Thon Index, Squared Gap Index and the class of FGT indices (Foster-Greer-Thorbecke) (Cowell, 2016; Haughton & Khandker, 2009; Foster & Seth & Lokshin & Sajaia, 2013). These indices will be described further in the paper.

Today an opinion prevails that a monetary index as a tool to determine the poverty level is insufficient as poverty is a multidimensional phenomenon (Alkire & Foster, 2011; Alkire & Santos, 2013; Antony & Visweswara Rao, 2007; Bellani, 2012; Betti & Gagliardi & Lemmi & Verma, 2012; Ravallion, 2011; Wagle, 2008; Sen, 1985; Atkinson, 2003) and non-monetary factors should be taken into consideration as well (Czapiński & Panek, 2014, 388). This means that beside people's incomes, non-monetary poverty (material deprivation) factors are also relevant. The fact that a person suffers non-monetary poverty is determined by a number of dimensions in which they are materially deprived. It is generally considered that an individual is in poverty when they are poor both in a monetary and non-monetary sense (Czapiński & Panek, 2014). The multidimensional poverty measures that have recently gained popularity are HPI (Human Poverty Index) and MPI (Multidimensional Poverty Index) (UNDP, 2013, 27) that will be described in more detail further in the paper.

SETTING POVERTY LINE

The next important issue in the poverty analysis is the choice of method to determine the poverty line. In the classical approach, the poverty line is defined basing on individual incomes or expenses. Individuals are considered poor when their income or spending is below a foxed poverty line. There are several types of poverty lines: the absolute, relative and subjective. Moreover, there is also a national poverty line being a basis for claiming social assistance in cash (Panek, 2011, 24-25). Methods that can be applied to determine the poverty thresholds are shown in table 1.

Table 1: Methods to determine poverty lines

Source: own study based on (Panek, 2011).

| Poverty line | Methods |
|--------------|---|
| Absolute | Basic needs method |
| | Method of food expenditure indicator |
| | Method based on the need of nutrition energy assessment |
| Relative | Method of fixed part of median or arithmetical average |
| | Method of distribution of income quintile |
| Subjective | Leiden method |
| | Method of subjective poverty line |

When estimating poverty lines for individual countries worldwide, their value should be expressed in a single currency. Therefore, for the sake of global aggregation and comparison, the World Bank uses the reference standards between 1.25 and 2.00 USD per day. Such low income is very rare, however in the cases of extreme poverty (e.g. homeless people) it can be substantial (Davis & Sanchez-Martinez, 2015, 11).

In the UE the poverty incidence is measured on the basis of the EU-SILC (European Union Statistics on Income and Living Conditions) survey, the aim of which is to provide the EU member states with comparable data about their citizens' living conditions. At the 2001 Laeken Summit the European countries agreed on a series of indicators to monitor the implementation of goals as regards fight against poverty and social exclusion. Following the standard adopted by Eurostat (European Statistical Office) in the EU-SILC study, a household member is considered to be at risk of poverty when their disposable income is below the poverty line set at 60% of the median equivalised income after social transfers. This means that a relative approach is used for the poverty measurement and the poverty line is related with the standard of living in every EU member state. The poverty line helps identify a group of people in a relatively worst income situation, disregarding the income levels in other European countries (Michorowski & Pollok, 2012, 74-75).

Every EU country conducts its own studies in this respect. For example, Poland uses data from annual family budget surveys run by the Polish Central Statistical Office (GUS, 2014) and from the Social Diagnosis survey (*Diagnoza Społeczna - Warunki i jakość życia Polaków*) held every two years (www.diagnoza.com) by the members of *Rada Monitoringu Społecznego* (the Council for Social Monitoring) (Czapiński & Panek, 2014).

DETERMINING AN EQUIVALENCE SCALE

When using classical approach to determine the poverty levels, we first need to calculate the so called equivalised household income. The size of households and their demographic structure in the populations under study are different. Additionally, they have different consumer needs. The ability to satisfy these needs is measured by income. For the income to play its role effectively, it should be adjusted to the level of a given household's needs. In practice, we calculate the equivalised income by dividing the household income by the number of its members, thus obtaining the income per capita. This is based on the assumption that the level of household needs is directly proportional to the number of the household members. However, this assumption does not include savings resulting from

the cohabitation of several people in one household. Because the aforementioned indicators (absolute volume of income and income per capita) do not address the difference in needs resulting from the household size and the age of its members, another indicator is applied, which is a ratio of the household income to the equivalence rate estimated on the basis of the assumed expenses. Thus obtained equivalised incomes are comparable with incomes of other households that differ in terms of their demographic qualities (Szulc, 2007, 131–163).

Equivalence scales show how many times the income of a given household must increase or decrease to reach the need satisfaction level of a standard household being a reference point. The standard household is usually considered as a single-person household whose equivalence scale is 1. When estimating the equivalence scales we must first of all take into account the number of household members. By adding other criteria, such as age, sex, place of residence, we introduce additional parameters that differentiate the range of needs as well as maintenance cost in various households (Panek & Zwierzchowski, 2013, 15).

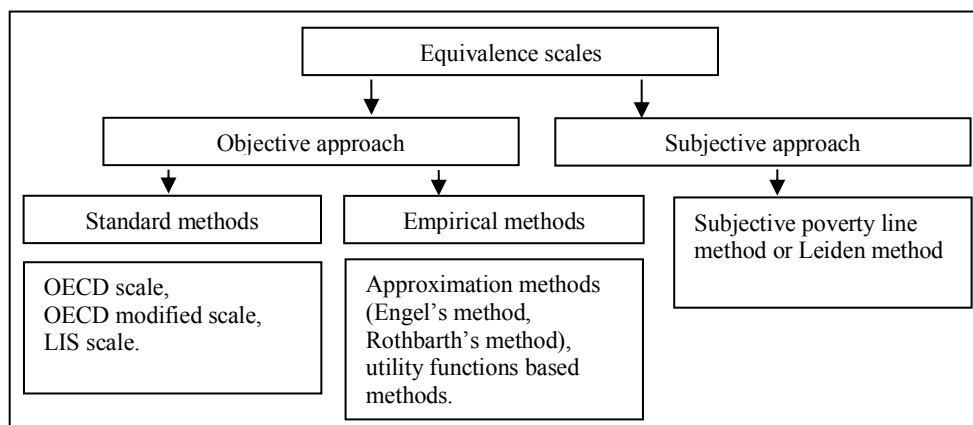


Figure 1: Equivalence scales estimating methods.

(Source: own study based on (Panek, 2011, 44-56))

The reference literature presents a wide range of methods to estimate equivalence scales. Generally, two approaches are used: the objective and subjective (Figure 1). In the objective approach, the households do not evaluate their income. Instead, normative and empirical methods are applied (Panek, 2011, 46-48). In normative methods the value of an equivalence scale is determined by experts. The most popular normative scales are the OECD (Organization for Economic Cooperation and Development) scale, the OECD modified scale and the LIS (Luxembourg Income Study) scale. The empirical methods determine the equivalence scales basing on the real consumption expenditure in households. The empirical methods include approximate methods (Engl’s, Rothbart’s) and methods based on utility functions.

In the subjective approach the equivalence scales are estimated on the basis of a subjective poverty line defined according to actual household incomes and the opinions formed by household members themselves. In the estimation process, the size of a household and other features of the household and its members are taken into account. Commonly used methods are the subjective poverty line method and the Leiden method (Panek, 2011, 44-56).

In practice, in the EU countries the OECD method is the most popular. See more on the formula used to determine the OECD scale in (Panek, 2011, 46-47; Giełda, 2014, 22).

POVERTY MEASURES

There are classical and multidimensional measures of poverty. The classical approach applies the so called aggregate poverty indices. These are statistical formulas that aggregate individual poverty indicators that allow for evaluating poverty on the national scale at the level of regions, locally and in individual households. As there is no common formula in this respect, various studies on poverty use different aggregate measures which provide information about different aspects of poverty. They are primarily focused on evaluating its incidence, depth, intensity and severity. Table 2 shows classical indexes.

Table 2: Selected classical aggregate poverty indexes
Source: own study based on (Panek, 2014, 212-214; 2011, 62-64)

| Index | Formula | Explanation | Aspects of evaluation |
|--------------------------|---|---|-----------------------|
| Headcount ratio | $H = \frac{n_u}{n}$ | n number of sample households, n _u number of poor sample households in surveyed population. | poverty incidence |
| Poverty gap index | $I^u = \frac{1}{n_u} \sum_{i=1}^{n_u} \left(\frac{y^* - y_i^e}{y^*} \right)$ | y_i^e equivalent income of <i>ith</i> household, y^* numerical value of poverty line. | poverty depth |
| Income gap index | $I^o = \frac{1}{n} \sum_{i=1}^{n_u} \left(\frac{y^* - y_i^e}{y^*} \right)$ | y_i^e equivalent income of <i>ith</i> household, y^* numerical value of poverty line. | poverty intensity |
| Poverty intensity index | $I^o = H \cdot I^u$ | H Headcount ratio I ^u Poverty gap index | |
| Poverty severity | $DU = \frac{1}{n} \sum_{i=1}^{n_u} \left(\frac{y^* - y_i^e}{y^*} \right)^2$ | N number of sample households, y_i^e equivalent income of <i>ith</i> household, y^* numerical value of poverty line. | poverty severity |
| | $DU = H \left(\frac{y^* - \overline{y_i^{eu}}}{y^*} \right)^2 + \frac{S^2(y_i^{eu})}{(y^*)^2}$ | H Headcount ratio y^* numerical value of poverty line, $\overline{y_i^{eu}}$ average equivalent income of poor households, $S^2(y_i^{eu})$ equivalent income variation of poor sample households in surveyed population. | |
| Sen-Shorrocks-Thon index | $SST = \frac{1}{n^2} \sum_{i=1}^{n_u} (2n - 2i + 1) \frac{y^* - y_i^e}{y^*}$ | n number of survey households, | |

| Index | Formula | Explanation | Aspects of evaluation |
|------------------------------------|--|---|----------------------------|
| | | nu number of poor sample households in surveyed population, y_i^e equivalent income ith household, y^* numerical value of poverty line. | |
| Watts index | $W = \frac{1}{n} \sum_{i=1}^{n_u} \ln \left(\frac{y^*}{y_i^e} \right)$ | n number of survey households, nu number of poor sample households in surveyed population, y_i^e equivalent income ith household, y^* numerical value of poverty line. | |
| Foster-Greer-Thorbecke index (FGT) | $FGT(\alpha) = \frac{1}{n} \sum_{i=1}^{n_u} \left(\frac{y^* - y_i^e}{y^*} \right)^\alpha$ | y_i^e equivalent income ith household, y^* numerical value of poverty line, α index parameter. | Scope and depth of poverty |

The poverty incidence is evaluated on the basis of the poverty headcount ratio, i.e. the proportion of the population that lives below the poverty line. The ratio equals zero in the absence of poverty-stricken households in a given country, and equals 1 when all the households live below the poverty line.

The poverty depth is evaluated on the basis of the poverty gap index. The measure equals an unweighted mean of individual poverty gap indices for each poor household. It adopts the value of 0 if in a given population there are no poor households, and its value is 1 when the incomes of all households equal zero.

The basic index measuring the poverty intensity is an income gap index, also expressed as the ratio of the poverty rate to the poverty gap index. In both versions the index adopts values from the interval of [0, 1].

The last aspect of the poverty measurement is its severity. It refers both to the income inequality among the poor and to the gap between poor household incomes and the poverty line. The poverty severity index is a square of the poverty gap. The poverty severity of households (and the value of the poverty severity index) grows with the increasing gap between their income and the poverty line. The weights given to households are proportional to the size of their income gaps. The index equals 0 when in a given population there are no poor households (Panek, 2014, 213-214).

In the multidimensional approach, poverty is usually measured with HPI (Human Poverty Index) and MPI (Multidimensional Poverty Index). HPI was developed by the UN to complement HDI (Human Development Index) and was first published in the report on social development in 1997 (Polak, 2014,

12). It is derived separately for the developing (HPI-1) and developed countries (HPI-2). In HPI-1 three indicators are captured: life expectancy (percentage of people surviving to the age of 40), adult illiteracy rate and the standard of living (consisting of three variables: the percentage of population deprived of access to healthcare and to drinking water, and the percentage of undernourished children below 5 years of age). HPI-2 is similar to HPI-1. The difference lies in the approach to the life expectancy rate as HPI-2 takes into account the percentage of people who survive to the age of 60 of adults lacking functional literacy skills, the rate of long-term unemployment and the percentage of population with income below 50% of the median income. In comparison to HPI-1, HPI-2 additionally informs about the social exclusion level. HPI adopts the values from the 0-100 interval, where 0 means wealth and 0 means extreme poverty (Kubiczek, 2014, 50; UN, 2008, 355–361).

The ten-dimensional Multidimensional Poverty Index (MPI) was developed by the Oxford Poverty & Human Development Initiative and UNDP (United Nations Development Programme) (UNDP, 2013). HPI was replaced by MPI in 2010. It captures three principal dimensions of the social development: education, health and standard of living broken into weighted 10 components - see table 3 (Antczak, 2012, 17-18).

Table 3: MPI components

Source: based on (Antczak, 2012, 17-18)

| MPI components | Weights for components |
|------------------------|-------------------------------|
| Education | 3,33 |
| – Years of Schooling | 1,67 |
| – School Attendance | 1,67 |
| Health | 3,33 |
| – Nutrition | 1,67 |
| – Child Mortality | 1,67 |
| Living standard | 3,33 |
| – Electricity | 0,56 |
| – Sanitation | 0,56 |
| – Floor | 0,56 |
| – Water | 0,56 |
| – Cooking Fuel | 0,56 |
| – Assets | 0,56 |
| Sum of weights | 10,00 |

To every component specific values are assigned. Zero means the absence of a given indicator in a household, while one means its presence. Then given value is multiplied by the weight assigned to the component. The household is identified as poor when the weighted sum of the components is 3 or more (Duclos & Tiberti, 2016, 677-710).

CONCLUSIONS

The above deliberations have proven that in the literature much emphasis is placed on the issue of poverty. Particular attention is paid to the dilemmas emerging at different stages of poverty analysis, from diverse types of approach to poverty as such to methods for identifying poverty at the individual level to measurement of diverse aspects of poverty (as shown at Fig. 2).

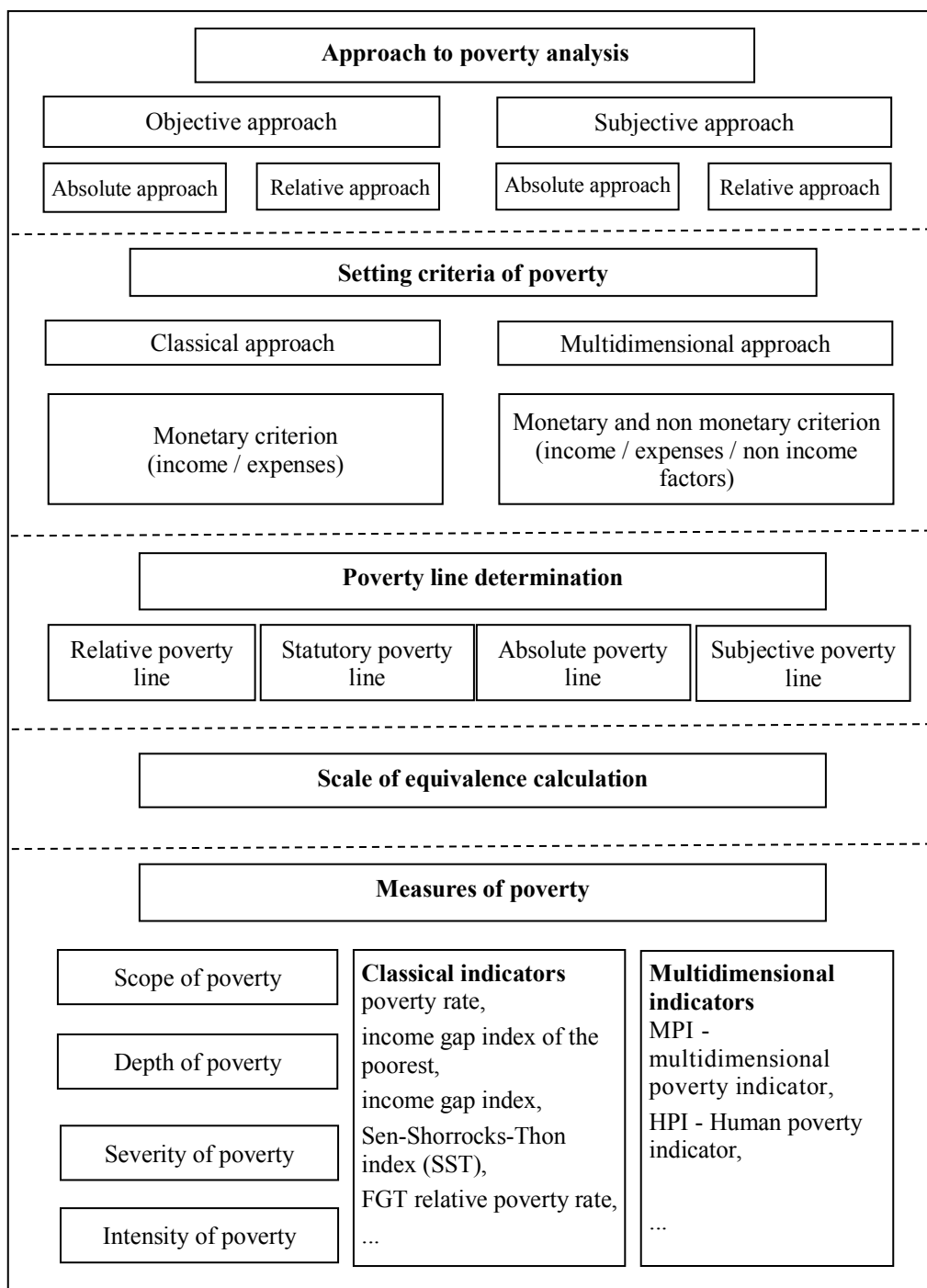


Figure 2: Elements of poverty measurement process.

The problem under consideration seems particularly important for social policy-makers because it is their responsibility to develop programmes to combat poverty which require proper identification of social groups at the highest risk of poverty and in need of financial support. Additionally, social policies must be based on accurately measured poverty intensity, depth, intensity and duration. These measurements reflect the problem gravity as well as its changeability in time and space. Consequently,

they help to develop programmes to prevent poverty, but they do not suffice to evaluate the effectiveness of these programmes.

The implementation of social programmes aiming to reduce poverty involves considerable public commitment – the financial, personal and material. Therefore it is obvious that it should be preceded with a thorough analysis of the expected outcome. However, such an analysis is not easy because poverty is a very complex phenomenon. Both its causes and effects are interrelated and create a network of relations that are often non-linear and of a feedback nature. Moreover, the effects of the policy can be seen in a relatively long perspective. The analysis of such a complicated system requires a method that will cope with the phenomenon complexity in a dynamic approach. In the authors' opinion, a computer simulation model may prove a good solution. Presently, works are under way on the concept of a simulation model to analyse the effect of programmes to combat poverty on the poverty level.

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The importance of regulation for functioning of the telecommunications market

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ABSTRACT

The purpose of this article is to determine the importance of regulation for effective functioning of the telecommunications market. A hypothesis has been formulated that all of the samples (groups) involved in the study are from the same population and therefore share the same median. Therefore the opinions of different groups regarding selected aspects of the functioning of telecommunications market are similar. The article is grounded in the results of research carried out by diverse entities: the Office of Electronic Communications (OEC), the National Regulatory Authorities (NRAs) Associations in Body of European Regulators for Electronic Communications (BEREC), telecommunications operators operating in Poland, and telecommunications market experts. The theoretical part of this article presents selected issues related to telecommunications regulation. This becomes the basis for the analysis of the results of our own research. The analysis is preceded by the presentation of our research methodology. The study itself was carried out by PAPI and CAPI techniques. The obtained test results were subjected to statistical processing using Kruskal-Wallis H test and Dunn's post hoc test. The article presents several key proposals related to the regulation of the telecommunications market. The proposals concern the criteria for assessing the state of telecommunications market development, compliance of regulations with the public interest and the interests of specific groups, and the impact of regulation on competition, as well as barriers hindering cooperation between the regulator of the telecommunications market and telecommunications operators.

Keywords: *regulation, telecommunications market*

INTRODUCTION

State intervention in management processes can take many forms. One of these is regulation, which is an example of a formal institution. Issues of the legitimacy of state market regulation, the definition of goals and tools of regulation, the study of its effectiveness and its compliance with the public interest have been widely presented in the literature. Attention should be first and foremost given to the Theory of Public Regulation, Private Interest Theories of Regulation - Capture Theory, Economic Theory of Regulation, Theory Agency, Nudge Theory which will be presented on the next part this article.

The purpose of this article is to determine the importance of regulation for effective functioning of the telecommunications market. A hypothesis has been formulated that all of the samples (groups) involved in the study are from the same population and therefore share the same median. Therefore the opinions of different groups regarding selected aspects of the functioning of telecommunications market are similar. In order to answer such a research question and verify the research hypothesis, the results of our own research were used. This research was carried out in the Office of Electronic Communications (OEC), the National Regulatory Authorities (NRAs) Associations in Body of European Regulators for Electronic Communications (BEREC), telecommunications operators operating in Poland, and telecommunications market experts. The applied method of purposeful selection was informed by the research objectives, i.e. determining the importance of regulation in the functioning of the telecommunications market by entities that have a specific effect on this

functioning. The obtained test results were subjected to statistical processing using Kruskal-Wallis H test and Dunn's post hoc test. Formulated conclusions particularly concern the studied groups, however, due to their importance for the telecommunications market as a whole, the Author considers them to warrant great attention.

Market Regulation - Selected Issues

The economic system is a collection of interrelated institutions defining the space in which economic entities operate (Woźniak, 2005). The institutions themselves can be defined in several ways (Szkudlarek, 2014). J.R. Commons (Commons, 1931) defines institutions as systems and principles of their functioning, from families and corporations to trade unions to economic associations to the state itself. T. Veblen (Veblen, 1994) defines institutions as dominating ways of thinking about certain social relations. The emphasis is placed here on the framework shaping an individual's behaviour. According to D.C. North (North, 1990) institutions are rules of the game, limitations imposed to shape human cooperation (institutions are rules of the game, organisations are the players). He distinguishes between the following types of institutions: formal – and informal – moral systems, habits, traditions, beliefs. An example of a formal institution is regulation (Mitnick, 1980; Joskow, Noll, 1981). Regulation defines what the entities (enterprises, consumers) can or cannot do, and what behavior is desired from them by the state regulator (Dudley, Brito, 2012). The nature of regulation can vary greatly (Kay, Vickers, 1990). Horizontal regulation defines rules for the entire economy, in line with the priorities of socio-economic development. Structural regulation defines rules for a specific sector of the economy. The regulation of market participants' behavior is aimed at influencing the decisions of entities subject to regulation.

The subject literature presents several theories of regulation (Hertog, 1999, 2010). The occurrence of market errors and the need to eliminate them while assuming no transaction costs, are the basic assumptions of Public Interest Theory. It assumes that market errors resulting from factors such as the markets structure, asymmetry of information, market shortage or negative external effects, are sufficient reasons for the state's regulatory interference in the economy. This complies with the notion of public interest (Joskow, Noll, 1981). Public Interest Theory assumes that expert regulatory authorities are trustworthy and intervene in a disinterested way in the economy to achieve public goals. In Capture Theory (Peltzman, 1989) it is proposed that government regulatory agencies are intercepted by specific groups pursuing their own interests. In addition, these agencies avoid conflicts with regulated entities. Agencies depend on the information they receive from those they regulate. In addition, regulators do not want to conduct costly litigation with regulated entities (Owen and Braeutigam, 1978). Exploration of issues of government regulators being intercepted by market operators are particularly associated with economists from the Chicago School of Economics. In the Economic Theory of Regulation (Posner, 1974) and also in Chicago Theory of Regulation (Noll, 1989) it is suggested that interest groups influence regulatory policy in exchange for information, and also provide politicians with political or financial support (Stigler, 1971). Some groups can organize themselves less expensively than others. Small groups have the advantage because the transaction costs are lower and the 'free-rider' problem is smaller than is the case with large groups. In the same issue of the Bell Journal of Economics in which Stigler put forward his theory of economic regulation, R.A. Posner (Posner, 1971) implicitly supplied the first criticism. He draws attention to the fact, that the Economic Theory of Regulation assumes an important role of public interest. In addition, he suggests that consumers are often beneficiaries of regulation at the expense of other interest groups. According to S. Peltzman (Peltzman, 1976), consumers themselves can be effective in intercepting the market regulator.

A further contribution to the Chicago theory of regulation was made by m.in. Becker. He concentrated on the consequences of the competition between interest groups, which he calls pressure groups. According to him (Becker, 1983), the effectiveness of interest groups can be influenced by economies of scale, access to the media and more effective combating of free-riding and other matter. The problem of regulation is also raised by economists identified with the Virginia School of Public Choice (Buchanan, Tollison, Tullock, 1980; Rowley, Tollison, Tullock, 1988;

Crew, Rowley, 1988). Attention is drawn here to the issue of "rent-seeking" (Krueger, 1974). Rent-seeking refers to specific groups spending limited resources on political activities in order to obtain advantageous rights that the state regulation can give them. Importantly, incentives to regulate or encourage rent-seeking do not only affect regulated entities or consumers, but also bureaucrats and politicians. In the context of regulation, the Agency Theory (Jensen, Meckling, 1976, Fama, 1980) also has to be mentioned. An agency relationship is where one entity is dependent on another, or in other words, one entity relies on the services provided by another in order to complete a task. Such an (explicit or implicit) contract implies delegation of authority from the principal to the agent (Ratajczak, 2007). There are two reasons for forming agency relationships: information asymmetry (Laffont, Martimort, 2002) and discrepancies between the agent's and principal's goal functions (Kraft, Ravis, 1998).

Currently in economic policy, including specifically in regulatory policy, concepts of behavioral economics are increasingly being applied (Borkowska, 2014; Szkudlarek, 2017). W Nudge Theory wskazuje się, że policy makers, including regulatory ones, use knowledge derived from the acquis of behavioral economics to create specific patterns of behaviour that they think are in the interests of both individuals and the public (Klick, Mitchell, 2006; Wright, 2007, Thaler, Sunstein, 2008; Hansen, Jespersen, 2013, Cooper, Kovacic, 2012).

Regulation constitutes a significant institutional environment for entities operating within the telecommunications market. The responsibility to conduct regulatory policy in Poland is borne by the President of the Office of Electronic Communications (OEC). Issues regarding the promotion of competition, caring for the public interest, and effective cooperation with entities subject to regulation, are of particular importance. Due to the importance of the development of the telecommunications market for the economy at large, it is essential that regulation is a stimulus for its development. Therefore, it is justified to conduct extensive research on the regulatory influence of the state on the telecommunications market.

RESEARCH METHODOLOGY

Answers to the research question and the verification of the research hypothesis were achieved thanks to the results of our own research. Research was carried out at the turn of 2016 and 2017 at the OEC among Presidents, Directors of Departments and Delegations ($n = 29$) and among NRAs, ($n = 10$), as well as among major telecommunications operators in Poland ($n = 15$, the share of the telecommunications market of these operators as measured by revenue was, 91.8% according to OEC data from 2017). Data was also obtained from telecommunications market experts ($n = 26$, for example from the Ministry of Digitization and chambers of commerce gathering telecommunications operators from all over Poland). The applied method of purposeful selection was informed by the research objectives.

PAPI and CAPI techniques were applied in the study. Closed questions (single choice) were grouped into the following thematic blocks:

1. Criteria for assessing the state of telecommunications market development;
2. Claims regarding the functioning of the telecommunications market;
3. Barriers that hinder cooperation between the regulator of the telecommunications market

and telecommunications operators.

The obtained test results were subjected to statistical processing using Kruskal-Wallis H test and Dunn's post hoc test, $\alpha=0.05$.

Research results

Firstly, the results of research on regulatory criteria for assessing the state of development of the telecommunications market are presented (Figure 1).

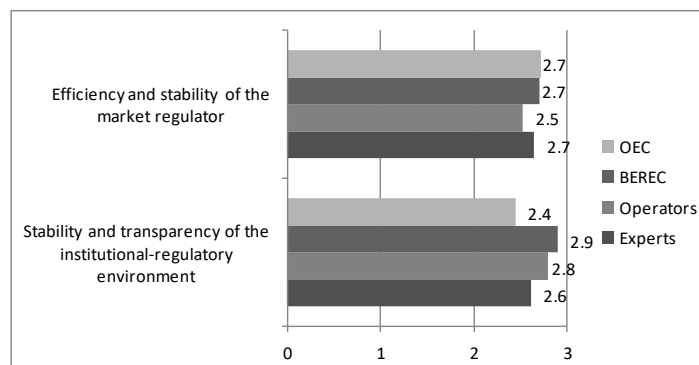


Figure 1: Evaluation of telecommunications market development criteria (scale: 1 - non-essential criterion 2 - moderately significant criterion 3 - very important criterion, 0-not applicable)

Source: own calculations.

In the opinion of all groups surveyed, the above regulatory criteria are very important in assessing the development of the telecommunications services market. The average assessment of the importance of both criteria was about 2.7 point on a 3-point scale. At the same time, the criterion of the regulator's effectiveness was judged to be relatively unimportant for telecommunications operators, along with the criterion of stability and transparency of the institutional- regulatory environment for the representatives of OEC.

Verification of the null hypothesis:

H_0 : all samples (groups) come from the same population with the same median;

H_1 : not all the samples (groups) come from the same population with the same median.

Test results for the market regulator's effectiveness criterion ($H = 0.9280021$, $p = 0.8187 > 0.05$) and for the criterion of stability and transparency of the institutional environment ($H = 7.428327$, $p = 0.0594 > 0.05$), do not warrant rejection of H_0 . Thus, the distributions of features for each of the individual groups is equal - there is a convergence of the groups' opinions on regulatory criteria in assessing the development of the telecommunications market.

Secondly, respondents were asked to respond to selected claims related to the regulatory impact of the state on the economy. The first of these claims concerns the assessment of compliance of the regulation with the public interest (Figure 2).

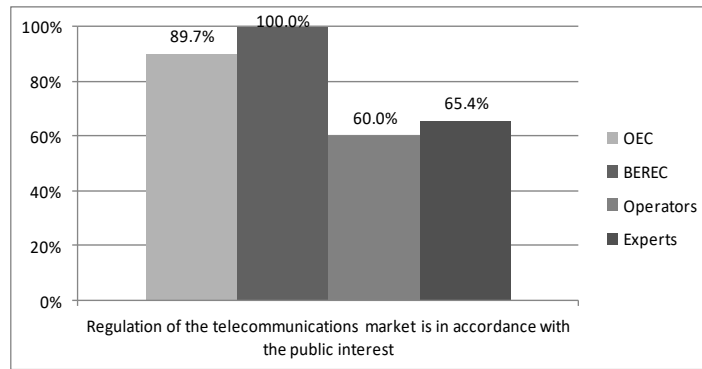


Figure 2: Regulation and public interest (answer "yes")
Source: own calculations.

Regulators of the telecommunications market (OEC and BEREC) are firmly convinced that the regulation is in line with the public interest. Telecom operators and telecommunications experts are of similar opinion, but in their case the percentage agreeing with this claim is somewhat smaller.

Verification of the null hypothesis:

H₀: all samples (groups) come from the same population with the same median;

H₁: not all the samples (groups) come from the same population with the same median.

The test result here ($H = 9.377697$, $p = 0.0247 < 0.05$) allows H₀ to be rejected. This result allowed us to use the *Dunn's post hoc test*. Unfortunately, the test did not indicate the distribution of features in which groups are not from the same population. However, the average rank values given by the OEC and BEREC were definitely higher than those given by telecommunications operators and telecommunications market experts. This indicates a certain difference of opinion between the groups regarding the compliance of regulations with the public interest.

Thirdly, respondents were asked to respond to the following claim regarding the beneficiaries of regulations (Figure 3).

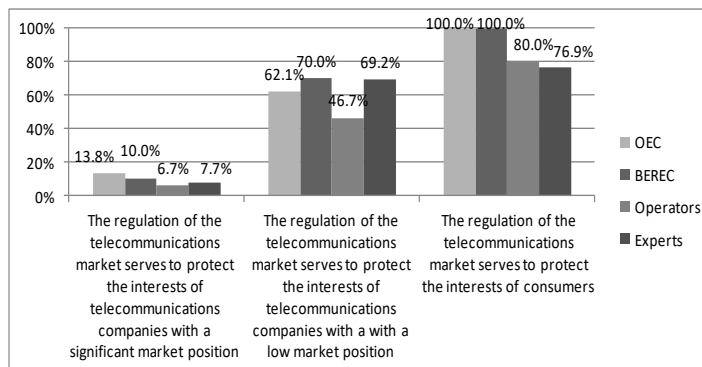


Figure 3: Beneficiaries of regulation (answer "yes")
Source: own calculations.

In each of the groups surveyed there was a strongly held opinion that the regulation of the telecommunications market primarily served to protect the interests of consumers and the interests of telecommunications companies with a low market share (though to a slightly lesser extent). A small proportion of respondents from all groups suggested that it also serves to protect the interests of telecommunications companies with a significant market position.

Verification of the null hypothesis:

H₀: all samples (groups) come from the same population with the same median;
 H₁: not all the samples (groups) come from the same population with the same median.
 The test results are presented in table 1.

Table 1: Beneficiaries of regulation

| Specification | the value of the statistics | p-value |
|--|-----------------------------|------------------|
| The regulation of the telecommunications market serves to protect the interests of telecommunications companies with a significant market position | H = 3.242896 | p =0.3557 |
| The regulation of the telecommunications market serves to protect the interests of telecommunications companies with a low market position | H=3.285310 | p =0.3497 |
| The regulation of the telecommunications market serves to protect the interests of consumers | H=9.614662 | p =0.0221 |

Source: own calculations.

There were no differences in the distribution of characteristics of particular groups with regard to the belief that the regulation serves to protect the interests of telecommunications companies (regardless of their market position). Such statistically significant difference was only found in relation to the claim that regulation of the telecommunications market serves to protect consumer interests. Rejection of H₀ allowed us to use the Dunn's post hoc test again. Unfortunately, the test did not indicate the distribution of features in which groups are not from the same population. However, the middle ranks given by the OEC and BEREC are the same as each other, and higher than the average ranks given by telecommunications operators and telecommunications market experts. Therefore, there is a difference of opinion between groups regarding compliance of regulation with the public interest.

The last claims that were evaluated by the respondents concerned the issue of the effectiveness of the regulation of service and infrastructure competition. The study results are shown in Figure 4.

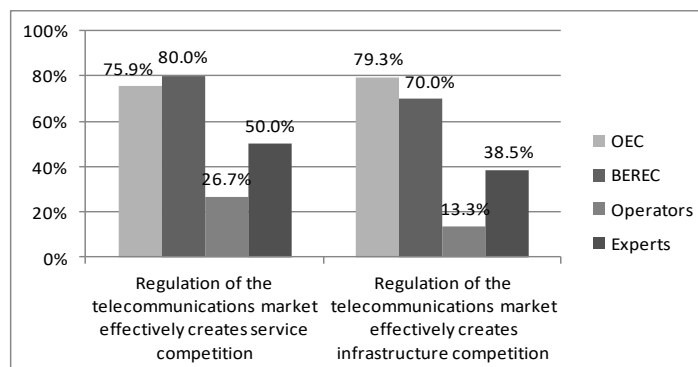


Figure 4: Effectiveness of regulation in creating service and infrastructure competition (answer "yes")

Source: own calculations.

According to regulators of the telecommunications market (OEC and BEREC) regulation definitely creates service and infrastructure competition. Telecom operators and telecommunications experts are less likely to see things this way. It is worth noting that only in the case of OEC representatives was a higher assessment of the effectiveness of creating infrastructure competition than of creating service given.

Verification of the null hypothesis:

H₀: all samples (groups) come from the same population with the same median;

H₁: not all the samples (groups) come from the same population with the same median.

The test results are presented in table 2.

Table 2: Efektywność regulacji w kreowaniu konkurencji usługowej i infrastrukturalnej

| Specification | the value of the statistics | p-value |
|--|-----------------------------|-------------------|
| Regulation of the telecommunications market effectively creates service competition | H = 6.933070 | p = 0.0741 |
| Regulation of the telecommunications market effectively creates infrastructure competition | H = 18.22485 | p = 0.0004 |

Source: own calculations.

The results of the research indicate that only in the case of the assessment of the effectiveness of creating infrastructural competitiveness is it possible to reject H₀. Dunn's post hoc test result indicates significant differences in the distribution of features between OEC and telecommunications operators (p = 0.002280). Therefore, between these groups there is a statistically significant difference in opinion regarding the effectiveness regulation in creating infrastructure competition.

The last part of the analysis presents the results of research on barriers hindering cooperation between the regulator of the telecommunications market and telecommunications companies (Figure 5).

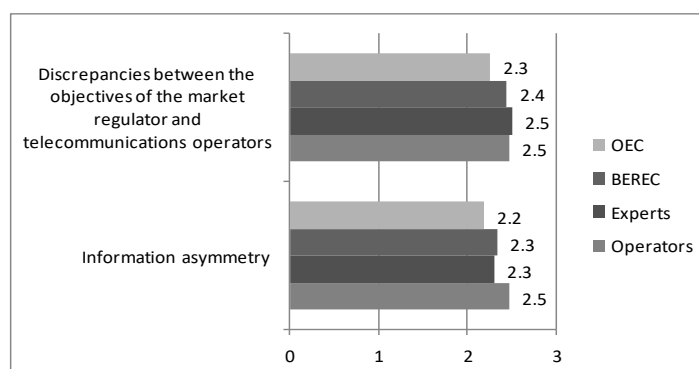


Figure 5: Barriers of cooperation between the regulator and telecommunications operators (0- not applicable, 1 - non-significant barrier, 2 - moderately significant barrier 3- very significant barrier)

Source: own calculations.

According to the opinions of individual groups, the asymmetry of information and the diverging goals of the market regulator and telecommunications companies are moderately significant barriers to cooperation between them. It can be noted that telecommunications operators consider this barrier more significant than other groups, and the OEC assess it to be of relatively lower significance.

Verification of the null hypothesis:

H₀: all samples (groups) come from the same population with the same median;

H₁: not all the samples (groups) come from the same population with the same median.
The test results are presented in table 3.

Tabela 3 Barriers of cooperation between the regulator and telecommunications operators

| Specification | the value of the statistics | p-volue |
|---|-----------------------------|------------|
| Information asymmetry | H = 1.962631 | p = 0.5802 |
| Discrepancies between the objectives of the market regulator and telecommunications operators | H = 2.823567 | p = 0.4196 |

Source: own calculations.

The results of the test did not allow H₀ to be rejected. Therefore, there are no statistically significant differences between particular groups in the assessment of selected barriers of cooperation between the regulator and telecommunications operators.

Conclusions

The problem of regulation in economics, as an example of a formal institution, is not completely new. It is usually treated as a government response to market errors resulting from, among others factors, its inefficient structure. Although several dozen years have passed since the creation of the theory of regulation, for example Public Interest Theory or Capture Theory, and market structures have undergone significant changes, questions about the legitimacy of regulations, beneficiaries of regulations or about barriers affecting its efficiency seem to be still relevant. It is necessary to avoid situations where the increase of prosperity achieved thanks to the removal of market imperfections will be undermined by errors of the state (the regulator). Building relations between the regulatory authority and telecommunications operators, which should lead to the greatest possible convergence of the purposes of their functioning, is of particular importance here.

The results of the research presented give the opportunity to assess the importance of the regulatory environment for the functioning of the telecommunications market. It should be noted that the effectiveness and transparency of regulation as well as the effectiveness of the regulator's actions are important criteria for all groups in assessing the development of the telecommunications market. Therefore, raising the efficiency of the regulator's actions should become a key focus for the regulator. It is very important for the government regulator to perform its tasks in a predictable manner, i.e. the expectations of other telecommunications market entities regarding the future have to be clear and transparent. Undoubtedly, an important conclusion from the conducted research is the consent of telecommunications market participants with the statement that the regulation is consistent with the public interest. It has been proved by Public Interest Theory. However, it should be pointed out that there are some differences in this assessment between OEC and BEREC, compared to experts in the telecommunications market and telecommunications operators. Respondents clearly indicate that consumers are the biggest beneficiaries of regulations, although in this case it is again possible to point to some differences in the assessment between OEC and BEREC compared to experts in the telecommunications market and telecommunications operators. The consensus of consumers being the largest beneficiaries of regulation is confirmed by the findings of Posner and S. Peltzman.

One of the key objectives of regulatory policy pursued is the creation of competition, according to the idea of "regulation for the benefit of competition". OEC and BEREC far more than telecommunications operators and telecommunications market experts indicate that regulation creates competition, both in the areas of service and infrastructure. However, in the second case, statistically significant differences in opinion were found between OEC and telecommunications operators.

The study also allowed us to determine the importance of barriers of cooperation between the regulator of the telecommunications market and telecommunications companies. According to all respondents (no statistically significant differences between the groups were found), the asymmetry of information and diverging goals of the market regulator and telecommunications companies are moderately significant barriers to cooperation between them. These are particularly important issues, highlighted by the Capture Theory, Economic Theory of Regulation and Agency Theory. In summary, it is necessary to positively assess a small number of cases in which individual groups differed in the assessment of the issues presented in the study. This is a good signal for building an effective regulation serving the development of the telecommunications market in accordance with the public interest.

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Expenditure of the agricultural budget on hydrographic conditions and biological progress as a supply determinant of environmental public goods in the long term (2000-2018)

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ABSTRACT

The aim of the analysis was to identify expenditure in the agricultural budget as a determinant of environmental public goods in Poland in the long period (2000-2018). Therefore, we analyzed expenditure on the agricultural sector (agriculture, rural development and agricultural markets) due to the share of the budget total and GDP and the titles of expenditure for biological progress in plant and animal production and expenditure in regional budgets related to the regulation of relations water (water drainage, water companies) and geodetic works. An analysis of dynamics and structure was used to verify the hypothesis, that the scale of selected agricultural budget spending is increasing in the long term, which is a prerequisite for the generation of environmental public goods in Poland. Unfortunately, in the face of unstable, often diminishing spending for the analyzed goal, the hypothesis was disproved.

Keywords: *environmental public goods, agricultural budget, water companies and drainage, geodetic works, biological progress in crop and livestock production*

INTRODUCTION

Agriculture and rural areas are the key elements creating public goods based on the natural environment. Not only is European agriculture responsible for providing food and material to be further processed but also occupies around 40% of land. As a consequence it has a huge impact on the condition of the environment in rural areas as well as the ability to use the environment (Baldock, Hart, Scheele 2010). It is a specific feature of public goods related to agriculture and rural areas that they can be an external effect of “regular” agricultural production, a purposive effect or a common supply that belongs to the society. At the highest level of generalization, among others, the following should be treated as such goods: water, air, biological diversity, landscape and food security (by definition all those goods are common or merit goods). In the professional literature, public goods provided by agriculture are identified with the external effects of agricultural activity, however this approach is too “narrow” as part of them can be the result of purposeful activity aimed at producing them – a product. It may take on the specific form of refraining from a specific activity. It must be noted that in rural areas different interests compete in the main for two factors: land and labour, because both production of private goods (food, bio-fuels, etc.) and provision of environmental public goods can be executed through them. However, in order to achieve a proper level of environmental public goods supply it is necessary to create economic incentives for farmers to manage their land and other production factors in such a way that it is possible to generate them. Financial motivation is a must, because such an approach requires another form of farming (e.g. reducing

the amount of livestock or farming in a more labour-intensive way) than in the case when only farmers' own interests were the priority.

Hence, under the CAP (Common Agricultural Policy), we have agri-environmental programmes that encourage agricultural producers to behave towards, among other things, generating environmental public goods. We should also highlight public spending, which may indirectly affect the supply of these goods. The purpose of the article is to show these kinds of expenses. That is why five budget titles were selected - two from the national (central) budget - namely biological progress in crop production and biological progress in animal production - and three from regional budgets (geodetic works, water drainage, water companies) and analyzed the dynamics of expenditure, its structure and mutual relations in the years 2000-2018, to verify the hypothesis that the scale of selected expenditure of the agricultural budget is growing, creating a stimulus for the supply of environmental public goods in Poland. The article is based primarily on the analysis of the source material, which are budget laws for Poland for the relevant years, in the part concerning the agricultural sector.

TOTAL EXPENDITURE IN THE AGRICULTURAL BUDGET OF POLAND AS A REFERENCE POINT FOR EXPENDITURE ON ENVIRONMENTAL PUBLIC GOODS

The analyzed period, as stated in the title, was divided into two sub-periods: the first - determined by the fact of integration with the EU (2000-2003), the second covers the post-accession years, i.e. 2004-2009 and 2010-2018, when Bank Gospodarstwa Krajowego (BGK) took over the service of the European funds budget (created in 2010). And so, until 2003, expenditure under the agricultural budget of Poland was full of pessimism. It was difficult to say that agriculture was preferred in government policy - the share of expenditure on the agricultural sector in the budget showed a trend towards stagnation at a level of approx. 2.2% of total budget expenditure, with dangerous decreases, as in 2002 to less than 2% (see Figure 1). It can also be considered that the situation of the agricultural sector has worsened since the beginning of the transformation of the Polish economy, and the many years of neglect have been indicative of the progressive marginalization of problems in the development of agriculture, rural areas and agricultural markets in successive annual state budgets. Until 2003, the economic situation of farms relative to the non-agricultural environment did not improve; on the contrary, the civilizational gap for most of them increased, and the decline deepened. The expected expenditure in budget acts have not been able to alleviate the fundamental problems of Polish agriculture and rural areas, even such issues as income disparity, education or the state of social infrastructure, despite the fact that the share of expenditure on the social sphere - ASIF (Agricultural Social Insurance Fund) averaged 10.8% (Czyżewski, Matuszczak 2011).

Since 2003, there has been a clear "rebound" in the form of a permanent, real increase in budget expenditure on the agricultural sector and, at the same time a change in the existing relations and trends. The average share of expenditure on agriculture, rural development and agricultural markets together with ASIF did not change (a negligible decrease of 0.2 percentage points), but the relation of expenditure for development purposes to social expenditure changed. For the first time, there was a chance for a direct improvement of the income situation of domestic agricultural producers and reproduction processes in their farms due to the more than doubled expenditure (4.5%) on agriculture, rural development and agricultural markets from the national budget.

Breaking the recessionary situation in Poland took place by improving the macroeconomic conditions of the functioning of the economy, in which the chances of stopping the growing decline of Polish agriculture and the countryside were perceived. The increased budget expenditure was obviously not able to immediately resolve the basic problems of the agricultural sector in Poland, because it required many years of consistent agricultural policy. To this the stream of support flowing from the EU budget, in which the agricultural sector is the

main beneficiary should also be taken into account - in 2006 – 43.3% of EU funds went to this sector, in subsequent years respectively: 2007 - 43.28%, 2008 – 41.49%, 2009 – 48.49%, 2010 – 35.9%, 2011– 31.9%, 2012 – 28.4%, 2013 – 28.78%, 2014 – 32.54%, 2015 – 36%, 2016 – 43.98%, 2017 – 36.12% and 2018 – 33.07% (*Opinie...*). Undoubtedly, it had a real impact on the development and accumulation processes of domestic farms, and also through environmental priorities CAP could be a stimulus for the supply of environmental public goods.

After 2010, the situation changed, but only from an accounting point of view - there was a change in the functioning of the agricultural budget, because BGK, took over the service of the European Funds Budget, established on 01/01/2010, and thus became the central institution serving income and expenses arising in settlements with the EU. This resulted in the separation of these funds from income, expenditure and the national budget deficit. Thus, only in the accounting dimension there was a reduction in the share of expenditure on agriculture, rural development and agricultural markets after 2010, because in fact the expenditure on these titles together with regional budgets and specific reserves in 2010 was in fact higher by 28.84% compared to the previous year.

Nevertheless, it should be noted that for several years there has been a steady decline in the share of expenditure on the agricultural sector in the general state budget. In the macroeconomic sense, this is worrying, because it allows for a more general conclusion regarding the declining role of the national agricultural budget in the strategy of creating public expenditure in Poland. The scale of reduction of financial expenses in the long term is too great, and is incomprehensible, especially in the context of ongoing GDP growth.

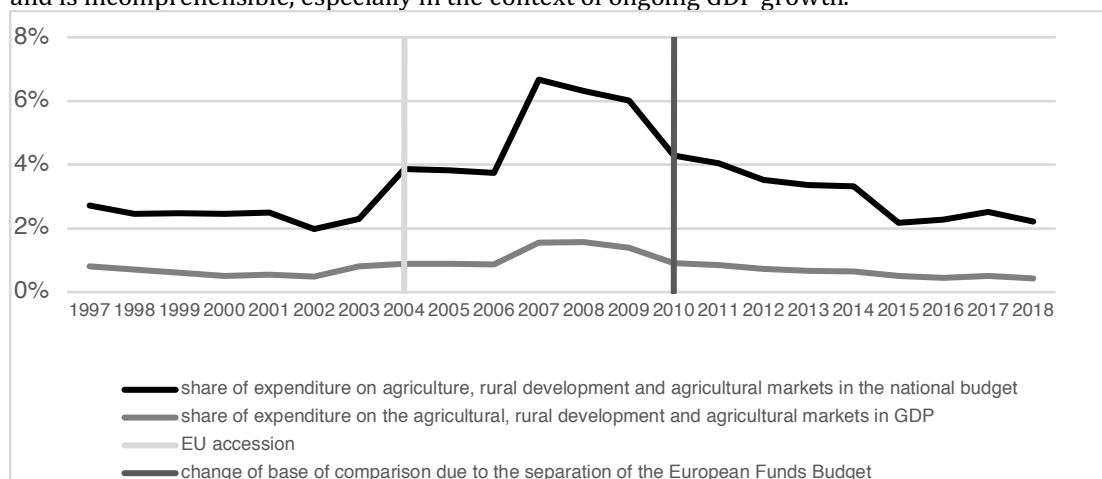


Figure 1: Share of expenditure on agriculture, rural development and agricultural markets in state budgets and GDP in 2000-2018 (in%)

* expenditure on the agricultural sector is expenditure on agriculture, rural development and agricultural markets together with regional budgets and specific reserves, excluding funds for co-financing and pre-financing of EU objectives and programs as well as ASIF

Source: own study based on annual agricultural budget opinions for successive years from 2000-2018 prepared by A. Czyżewski in the form of expert opinions for the Chancellery of the Senate of the Republic of Poland based on the analysis of projects and implementation of budget laws for the relevant years.

BUDGET EXPENDITURE ON BIOLOGICAL PROGRESS IN PLANT AND LIVESTOCK PRODUCTION AS A STIMULANT FOR THE CREATION OF ENVIRONMENTAL PUBLIC GOODS

As noted above, agriculture is a sector of the economy that has a strong impact on the environment - both positively and negatively (Cooper et al. 2009, Buckwell 2009). Which effects of activity prevail depends on the way the farmers treat the environment as part of their production activities. The CAP, which has been reformed in recent years, promotes agricultural production integrated with environmental protection (Małżewska 2015). Nevertheless, there is a specific conflict of interest that is visible in the way land is used (to maximize the private benefits of agricultural producers, i.e. maximizing income) and the need for society to deliver environmental public goods (Duer 2012, Czyżewski, Stępień 2013, Buchanan 1968, Head 1962). However, farmers' behavior can be stimulated in a desirable way through financial incentives, including both through Common Agricultural Policy (CAP) instruments, and indirectly through the financing of various activities or infrastructure from the national agricultural budget. The awareness that agriculture is important for preserving biodiversity and landscape diversity in Europe (*The integration.....* 2006, Burkiewicz, et al. 2007) favors and legitimizes the transfer of public funds to this sector.

Therefore, among the titles in the agricultural budget, we can distinguish those that indirectly are able to determine the creation of environmental public goods. It seems that the most important is the expenditure on biological progress in plant and livestock production. Thanks to knowledge, innovations and progress, one can manage the resources available to agriculture in order to work towards the sustainable development of the economy - protect the environment, produce food, not change the climate, and ultimately improve human well-being. Therefore, innovative activities in research and development units and transfer of knowledge to the economy are of key importance, and are not possible without proper financing, including, to a large extent, funding from public funds.

The analysis of spending on these titles in the agricultural budgets of the last nineteen years (2000-2018) demonstrates that it cannot be said that their importance is growing, on the contrary - both goals were clearly declining in the analyzed period. A simple comparison of expenditure on biological progress in livestock production in 2018 in relation to 2000 indicates that they account for less than 2/3, excluding inflation. The situation is much worse in the case of expenditure on biological progress in crop production, where the funds allocated for this purpose in 2018 in relation to the base year 2000 amount to only 15%. It is also interesting to compare the dynamics of both titles (see Figure 2). While it can be concluded that the expenditure on biological progress in livestock production was extremely stable, in the case of expenditure on biological progress in crop production we observe relatively large fluctuations (e.g. in 2004 or 2013), which may have been caused by the lack of a systemic approach to this type of expenditure.

The ratio of expenditure on both titles to each other was also indicated - at the beginning of the analyzed period it amounted to 0.73 (where expenditure on biological progress in livestock production was PLN 140.9 million, and in crop production PLN 102.4 million), and in 2018 barely 0.17 (where expenditure on biological progress in livestock production was 89.9 million PLN, and in crop production 15.6 million PLN), which confirms the previous observations.

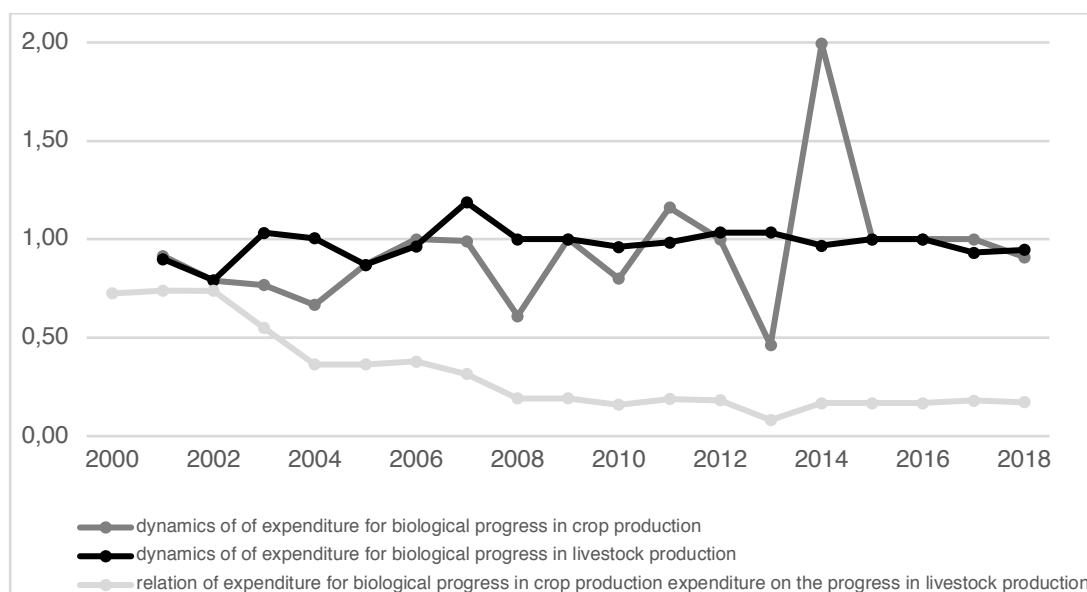


Figure 2: Dynamics of budget expenditure on biological progress in plant and livestock production and their ratio in 2000-2018 (in%)

Source: as in Fig.1

It is worth noting that integration with the EU did not change the situation significantly. Increasing expenditure was not spent on the analyzed titles.

EXPENSES DETERMINING THE CREATION OF ENVIRONMENTAL PUBLIC GOODS IN REGIONAL BUDGETS

In order for environmental public goods to be created, the agricultural sector requires the proper infrastructure. As mentioned earlier, without basic resources such as water or soil, no agricultural production is possible, and neither is generating environmental public goods through this activity. Hence, the focus was on those titles from the agricultural budget which may support the infrastructure related to the regulation of water relations and geodetic works. Expenditure on potential infrastructure supporting the production of environmental public goods can be undertaken within the regional budgets of regional governors, i.e. the representatives of the government in a given region, and among them can be mentioned: water drainage, water companies and geodetic works.

Regional expenditure on the agricultural sector is understood as units and activities financed from regional budgets. Their general division concerns current and investment expenditure, as well as co-financing of projects with EU funds. Exploring the structure of expenditure for agriculture-related purposes in regional budgets, we can observe that, until Poland's integration with the EU, the amount of expenditure for the purposes envisaged for implementation in regional budgets was stagnant. It can even be assumed that if these funds did not change in nominal terms, their real reduction was so real. The situation changed after 2005, since when we have been dealing with a relatively high increase from year to year. Over the twelve years of Poland's membership of the EU, expenditure in regional budgets almost doubled.

Also interesting is the structure of expenditure in these budgets in the agriculture and hunting sectors, where until 2005 a relatively stable share was divided into current expenditure (85%) and relatively small investment expenditure (15%) as regards shares. A radical change came in 2006, when the share of investment expenditure increased, and a year later EU funds

were involved in financing titles from regional budgets, which resulted in a significant increase in the share of investments (see Figure 3). Thus, one can speak about both the apparent substitutability of current expenditure with investment expenditure, and a certain complementarity of domestic investment expenditure with EU funds. Thanks to the co-financing of projects with the use of EU funds, it then became possible to implement a much larger number of projects, mainly in the field of geodetic works and water drainage for agriculture. It should also be noted that the EU budget takes over the performance of certain titles, which significantly relieves pressure on the national budget.

Considering the dynamics of expenditure on particular titles in regional budgets in the agriculture and hunting sector, the title should be distinguished due to the high, albeit variable expenditure dynamics in the post-accession period in relation to the time before integration, the financing of water melioration. We can observe years (2006, 2007, 2009, 2011, 2014, 2017) in which these expenses sometimes increased many times over the previous year.

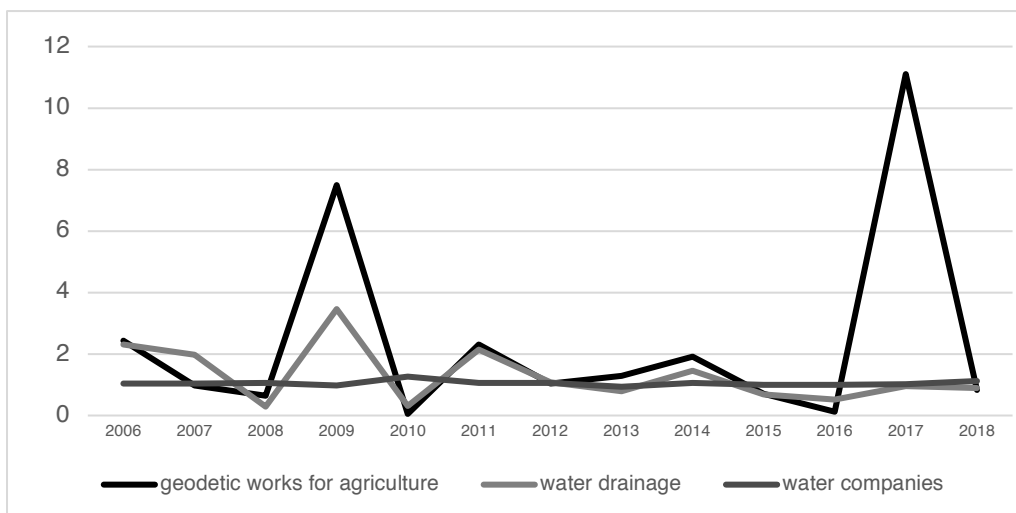


Figure 3: Dynamics of expenditure on geodetic works for agriculture, water drainage and water companies in regional budgets in the agriculture and hunting sector in 2006-2018

Source: as in Fig.1

High variability was also characteristic for expenditure on geodetic works for agriculture, i.e. land preparation for agricultural and investment activities - with rises as high as seven-fold, as in 2009, or in 2017, eleven-fold, but also twice as often. High fluctuations in spending on these activities resulted mainly from the diverse support of EU projects over time. Analyzing the structure of the distribution of funds in the post-accession period, we can conclude that in the case of surveying and equipment works, nearly 2/3 of funds were transferred to current expenditure, while nearly 1/3 was expenditure on co-financing projects with EU funds. However, in relation to water drainage, this relation was slightly different - current expenditure accounted for an average of 45%, and investment expenditure - 55%, half of which was financed from EU funds. Annualized expenditure on water companies turned out to be the most stable (see Table 1).

Table 1. Dynamics of expenditure in regional budgets for geodetic works, water drainage and water companies in the years 2000-2018

| Expenditure | Before accession to the EU | | | | | |
|------------------------------------|----------------------------|------|------|-------------|------|---------|
| | 2001 | 2002 | 2003 | average | | |
| geodetic works for agriculture | 0,76 | 0,67 | 1,00 | 0,81 | | |
| water drainage and water companies | 0,82 | 0,85 | 1,01 | 0,89 | | |
| After accession to the EU | | | | | | |
| | 2004 | 2005 | 2006 | 2007 | 2008 | |
| geodetic works for agriculture | 1,01 | 0,87 | 2,44 | 0,98 | 0,65 | |
| water drainage | 1,02 | 0,82 | 2,31 | 1,97 | 0,29 | |
| water companies | 1,03 | 0,81 | 1,04 | 1,04 | 1,06 | |
| | 2009 | 2010 | 2011 | 2012 | 2013 | |
| geodetic works for agriculture | 7,50 | 0,05 | 2,31 | 1,04 | 1,28 | |
| water drainage | 3,46 | 0,30 | 2,15 | 1,07 | 0,79 | |
| water companies | 0,97 | 1,27 | 1,06 | 1,06 | 0,94 | |
| | 2014 | 2015 | 2016 | 2017 | 2018 | average |
| geodetic works for agriculture | 1,92 | 0,71 | 0,12 | 11,10 | 0,83 | 1,08 |
| water drainage | 1,45 | 0,69 | 0,52 | 0,95 | 0,89 | 1,01 |
| water companies | 1,05 | 0,99 | 0,99 | 1,01 | 1,11 | 1,04 |

Source: as in Fig.1

As far as the volume of expenditure is concerned, the highest amounts go on water drainage, in second place - geodetic works for agriculture, and finally water companies. Unfortunately, in the case of such important activities as water drainage, one can not speak of a systematic increase in the level of funds earmarked for them (in the initial period of analysis in 2000, it was PLN 90.2 million, and in 2018, PLN 124.5 million, while in some years the expenditure amounted to PLN 509.7 million, as in 2009). Spending on surveying and equipment works is 62.6 million PLN in 2018, which is four times higher than in 2000 (but it should be added that in 2009 it reached as high as PLN 265.7 million). The lowest value is for water companies - barely 4.3 million in 2018, which is the highest amount allocated for this purpose in the analyzed period.

Conclusions

The above considerations entitle to the following observations:

- the long-term tendencies of the analyzed expenditure in the central budget and regional budgets for the agricultural sector are too weak to be considered as stimulators for the creation of environmental public goods in the long run. Expenditure on biological progress in crop production has been clearly underestimated during the period considered; a slightly better, more stable position of expenditure on biological progress in livestock production can be observed;

- expenses related to the regulation of water relations are often complementary with EU funds affecting the agricultural sector, they are also often substituted by EU funds, which results in relatively systematic support. Therefore, this can be considered a positive premise conducive to the creation of environmental public goods in Poland in the long term.

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How to limit the scale of bankruptcies of micro-, small and medium-sized enterprises – selected aspects

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ABSTRACT

The scale of bankruptcies in Poland, which has increased twofold over ten years, has prompted the authors to research the phenomenon, its scale and growth rate, and the structure of liquidated enterprises. This article aims to present opportunities for reducing the number of closed SMEs and strengthening their position in the Polish market through instruments such as franchising or factoring.

The theoretical aspects and empirical findings concerning Polish economy can be used as an exemplification of the broader issue of an increased number of such companies going bankrupt. Against the backdrop of theoretical aspects of business operation, this study presents statistics on closures of micro-, small and medium-sized enterprises in Poland and their choices in designing and diversifying sources of financing. The calculations and tabular depiction of the number, structure and pace of liquidation have been confronted with the strategies pursued by the owners of enterprises as regards financial management and economic activity opportunities.

The results indicate that as the number and pace of bankruptcies are rising, owners are becoming more aware of appropriate financial instruments and methods of pursuing economic activity, such as franchising or factoring.

Keywords: *SME, entrepreneurship, bankruptcy, financial management, franchising, factoring*

INTRODUCTION

Small and medium-sized enterprises (SMEs) are the dominant type of businesses with a vital role in today's market economy. This is due to their contribution to macroeconomic indices such as GNP, employment and export rates (Łuczka, 2002, pp. 55–70; Małecka, 2016, pp. 91–122). With their main qualitative characteristics such as the owner's influence on key decisions, different type of financial management and distinct organisational structure, SMEs are substantially different from large enterprises (Modigliani & Miller, 1958, pp. 261–297; Łuczka, 2013). They have limited equity, restricted access to third-party capital, in particular bank credit, and very limited possibilities of obtaining financing in the capital market (Galbraith, 1957, pp. 124–133; Busse, 1993, p. 19; Małecka, 2016b, pp. 147–129). Therefore, they are financially unstable, do not influence major market parameters, and their survivability, notably during an economic downturn, is also limited. Is there any alternative to enhance the financial and market security of SMEs? It seems that this may be provided by improved quality of financial management and franchising. The quality of financial management is shaped by, among other things, the policy of short-term bank loans, a non-banking alternative for which is factoring, to maintain liquidity and – importantly – support commercial lending policies

(allowing, for instance, later payment terms in commercial offers). Franchising, in turn, plays a major role in mitigating risks and reducing the cost of market entry and running a business. On launch, franchisees are equipped with know-how, a brand and ways to organise their outlet, all of which are well-recognised by customers.

Among many options for improving liquidity and protecting enterprises from bankruptcies, the authors propose two: factoring and franchising, considered in terms of functional strategies vs. general business strategies. However, the authors chose to focus on the availability and effectiveness of tools that would primarily ensure the market survival of SMEs.

Bankruptcies can be caused by a number of reasons. Many examples and reports on bankruptcies are available for comparison. Due to formal limitations, this article makes use of data collected by Polish banks and provided in a Deloitte report, as well as practical examples of specific industries.

METHODOLOGY

To investigate the low indicators for number, growth rate and structure of liquidated companies (survival of newly established SMEs), by headcount, official Polish statistics on micro-, small and medium-sized enterprises, mainly for the 2003–2013 period, were used and compared with the liquidation rate of large enterprises. SME survival rates in the initial five years of operation were also examined. The study cites related literature on the discussed issues to find theoretical possibilities of reducing the scale of SME bankruptcies. Factoring and franchising development in Poland, as expressed by an increased number of franchise brands and businesses, was analysed. The authors present the results of their own research conducted among DIY franchise chains in Poland. The sample size in each of the tested chains was 40 ($x_{ij} = 80$ for the whole study). Mathematical analysis tools were used to describe and present the shares and sizes of groups, and the Pearson test was used to examine the relationship between the assumed significance level $\alpha=0.05$ and the obtained dependence, presented in the contingency table, relative to the location and years of survival of the franchise enterprises.

PACE AND STRUCTURE OF SME LIQUIDATION

SMEs' strategy has for decades been dominated by the problem of sustaining their market operations. Owners have been undertaking efforts to maintain and improve their position in the face of economic fluctuations and challenges mounting in a competitive market (Łuczka, 2013). In particular since the early 1970s, these efforts have been supported by consciously developed and implemented SME-oriented policies of individual countries and the EU (see also: Małecka, 2015, pp. 496–507). Those policies originated from the contribution of SMEs to fundamental macroeconomic indices and their specific role in regional and local development (Fritsch & Story, 2014, pp. 939–545). Indeed, SME development has always provided an impetus for attracting, creating and expanding other areas of economic activity and for social development.

SME market survival capabilities are far more limited than those of large companies, especially during economic downturns. Economic fluctuations result in a certain increased number of SME bankruptcies, whereas large companies collapse rarely and spectacularly (Łuczka, 2002, pp. 55–70).

The number, pace and structure of closures of micro-, small and medium-sized enterprises in Poland in 2003–2013 indicate that this phenomenon was present mostly among companies employing up to 9 and 10–49 workers. The highest bankruptcy rate occurred among micro-enterprises at 220.7% (Table.1). The pace of their liquidation was twice greater than for small businesses (113.8%), four times faster than for medium-sized enterprises (56.5%), and seven times faster than for large companies (33.4%). The liquidation share resulting from the 2008–2009 economic crisis increased

for even large enterprises. All companies were hit by the economic downturn, although to varying degrees. On a positive note, the closure rate for medium-sized enterprises was reduced by half (56.5%) and for large companies was cut to one third (33.4%) in the period under consideration. An examination of the structure of liquidated enterprises indicates that micro-enterprises were a particularly dominant group in this respect.

Table 1: Number, growth rate and structure of closed enterprises by headcount in Poland

(Source: Own calculations based on PARP 2015, p. 118)

| Years | Enterprises by headcount | | | | Total |
|--|--------------------------|-------|--------|------|--------|
| | 0–9 | 10–49 | 50–249 | >249 | |
| Number of enterprises | | | | | |
| 2003 | 148.20 | 3.89 | 978 | 341 | 153.41 |
| 2004 | 204.98 | 3.72 | 911 | 232 | 209.85 |
| 2005 | 228.17 | 4.06 | 665 | 172 | 233.08 |
| 2006 | 283.27 | 3.74 | 451 | 178 | 287.64 |
| 2007 | 253.10 | 3.35 | 490 | 122 | 257.06 |
| 2008 | 257.72 | 5.17 | 988 | 240 | 264.11 |
| 2009 | 377.92 | 4.73 | 612 | 182 | 383.44 |
| 2010 | 264.13 | 3.96 | 493 | 123 | 268.71 |
| 2011 | 413.00 | 5.50 | 734 | 170 | 419.40 |
| 2012 | 303.58 | 6.53 | 617 | 152 | 310.87 |
| 2013 | 327.11 | 4.41 | 553 | 114 | 332.18 |
| Enterprise growth rate 2003=100.0 | | | | | |
| 2004 | 138.1 | 95.8 | 93.1 | 68.0 | 136.8 |
| 2005 | 154.0 | 104.4 | 68.0 | 50.4 | 151.9 |
| 2006 | 191.1 | 96.2 | 46.1 | 52.2 | 187.5 |
| 2007 | 170.8 | 86.1 | 50.1 | 35.8 | 167.6 |
| 2008 | 173.9 | 132.9 | 101.0 | 70.4 | 172.2 |
| 2009 | 255.0 | 121.6 | 62.6 | 53.4 | 249.9 |
| 2010 | 178.2 | 101.9 | 50.4 | 36.1 | 175.2 |
| 2011 | 278.7 | 141.4 | 75.1 | 49.9 | 273.4 |
| 2012 | 204.8 | 167.9 | 63.1 | 44.6 | 202.6 |
| 2013 | 220.7 | 113.3 | 56.5 | 33.4 | 216.5 |
| Enterprise structure by size | | | | | |
| 2004 | 97.7 | 1.8 | 0.4 | 0.1 | 100 |
| 2005 | 97.9 | 1.7 | 0.3 | 0.1 | 100 |
| 2006 | 98.4 | 1.3 | 0.2 | 0.1 | 100 |
| 2007 | 98.5 | 1.3 | 0.2 | 0.0 | 100 |
| 2008 | 97.6 | 1.9 | 0.4 | 0.1 | 100 |
| 2009 | 98.6 | 1.2 | 0.2 | 0.0 | 100 |
| 2010 | 98.3 | 1.5 | 0.2 | 0.0 | 100 |
| 2011 | 98.5 | 1.3 | 0.2 | 0.0 | 100 |
| 2012 | 97.7 | 2.1 | 0.2 | 0.0 | 100 |
| 2013 | 98.5 | 1.3 | 0.2 | 0.0 | 100 |

Data on the number, growth rate and bankruptcy structure by company size show that micro- and small enterprises are the least secure. This implies that company security increases with company size.

Other important data on the long-term position of SMEs are provided by an analysis of their survival rates. According to the findings, the shares of SMEs established in 2007 and 2008 declined steadily in the following five years. Only after the first year of operation, the survival rates were 70.7% and 76.4%, respectively. After five years, SME survival rates were 31.8% and 33.0%, meaning that only every third SME remains in the market after this period (Table 2).

Table 2: Survival rates in consecutive years of SMEs established in 2007 and 2008 and active in 2007–2012 and 2008–2013 (%)
(Source: Own calculations based on PARP 2015, p. 119)

| Years | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 2008/2007 | 2009/2008 | 2010/2009 | 2011/2010 | 2012/2011 | 2012/2007 |
| 70.7 | 76.5 | 80.4 | 85.5 | 73.3 | 31.8 |
| Years | | | | | |
| 2009/2008 | 2010/2008 | 2011/2009 | 2012/2010 | 2013/2011 | 2013/2008 |
| 76.4 | 76.3 | 80.3 | 65.6 | 86.2 | 33.0 |

The causes of the poor condition of SMEs need to be sought in several areas. Firstly, they are directly related to the degree these enterprises influence basic market parameters. SMEs, except for companies operating in a market niche, generally cannot influence parameters such as demand and price. SMEs cannot influence the prices of products and services on offer either: the market sale price is final for SMEs, and they must accept it. Therefore, they may frequently be forced, at the expense of giving up part of their profit, to set the price accordingly so that their offer can be acceptable to consumers (Łuczka, 2002, pp. 55–70).

Another reason for the weaker position of SMEs is lack access to economies of scale of production and sales. They have higher unit costs, and thus lower unit profits, consequently gaining lower overall volume of profit.

Thirdly, limited equity results in lower creditworthiness and a worse position of SMEs in applying for third-party capital, especially bank credit. This phenomenon has been referred to as credit discrimination (Galbraith, 1957, pp. 124–133). Additional difficulties are faced by newly established enterprises without a credit record sufficient for banks but planning to build their position by relying on bank credit (see also: Małecka, 2016a, pp. 91–122). Another issue is SME access to the capital market for raising capital (see: Małecka & Łuczka, 2016, pp. 418–431).

The literature emphasises that the main cause leading to a company’s collapse is lack of financial liquidity, where the sequence is: imbalance of financial liquidity – loss of financial liquidity – loss of financial balance – bankruptcy and liquidation (Gregory et al., 2005, pp. 382–392). Financial liquidity imbalance may be connected with changes in external conditions (business environment) of macroeconomic nature.

Financial liquidity imbalance may also ensue from internal factors. The quality of standards for good practices and communication in business is still lower in post-transformation countries. What matters is the key issue of trust (in Poland, this indicator is among the lowest in Europe) and responsibility for reputation as well as for building a good brand and image. However, problems with maintaining financial liquidity in SMEs mostly result from lower quality of financial management, especially in

smaller companies. The smaller the company, the smaller the scope of planning. Entrepreneurs at times find it difficult to answer how their company will operate in a year, or even a month. They do not use any dedicated financial instruments, inadequately manage the working capital, or even do not implement good trade credit policies (WTO, 2008). It is not a common management practice of many companies to take advantage of cash discounts and factoring, for instance. Meanwhile, SMEs tend to have insufficient equity forcing them to seek other readily available sources of capital, primarily through extending payment due dates. The trend is clear: the smaller the company, the bigger the share of trade credit in the capital structure (Łuczka, 2013; Małecka & Łuczka, 2016, pp. 418–431).

ROLE OF FACTORING AND FRANCHISING IN LIMITING THE SCALE OF SME BANKRUPTCIES

The problem of overdue payables and mounting receivables is faced by 70% of SMEs, and half of them struggle with a significant disturbance of their financial management for this reason. Hence, it is understandable that half of SMEs in Poland regard achieving profit, and 37% of them see maintaining financial liquidity, as the most important goal of their financial management. One quarter of SME respondents used none of the above-mentioned liquidity management instruments. In addition, 37% of them were not interested in this issue, and 57% resorted to extending payment due dates. Good news is the simultaneously rising percentage of entrepreneurs who, appreciating the problem of timely payments, secure the necessary conditions in the course of contract negotiations (Deloitte, 2016).

Statistical data on the turnover of factoring firms associated with SMEs are also interesting. In 2003–2013, this turnover rose dynamically – more than ten times – and continues to show a steady upward trend (Table 3). This may prove that SMEs are gradually taking efforts to maintain financial liquidity and, consequently, to strengthen their position (see also: Badrinarayanan et al., 2016, pp. 3943–3950; Nyadzaayo et al., 2016, pp. 163–174).

Table 3: Size and growth rate of factoring and franchise brands and businesses
(Source: Own calculations based on CSO data and Kaleta 2016)

| Years | Factoring | Franchising | | Factoring | Franchising | |
|-------------|-------------|-------------|------------|------------------------|-------------|------------|
| | | Brands | Businesses | | Brands | Businesses |
| | PLN million | Number | | Growth rate 2003=100.0 | | |
| 2003 | 12.19 | 216 | 11.882 | 100.0 | 100.0 | 100.0 |
| 2004 | 14.10 | 256 | 14.162 | 115.7 | 118.5 | 119.2 |
| 2005 | 14.18 | 310 | 20.661 | 116.3 | 143.5 | 173.9 |
| 2006 | . | 329 | 23.131 | . | 152.3 | 194.7 |
| 2007 | . | 405 | 25.654 | . | 187.5 | 215.9 |
| 2008 | . | 517 | 30.634 | . | 239.4 | 257.8 |
| 2009 | . | 626 | 37.982 | . | 289.8 | 260.7 |
| 2010 | 64.20 | 762 | 45.202 | 526.7 | 352.8 | 380.4 |
| 2011 | 79.37 | 845 | 53.392 | 651.1 | 391.2 | 449.4 |
| 2012 | 113.10 | 942 | 57.490 | 927.9 | 436.1 | 483.8 |
| 2013 | 130.96 | 998 | 63.482 | 1074.4 | 462.0 | 534.3 |

Alternatively, SMEs can sustain financial liquidity and balance and build and maintain their position by taking advantage of franchising. Franchising significantly reduces the proportion of liquidated SMEs, which is approximately 10% within the initial five years of operation (Wellalage & Locke, 2012, pp. 1–17). “Franchise systems represent unique entrepreneurial business structure because they

comprise different organization that are legally independent, economically independent, and operationally indistinguishable”(Wu Chih-Wen, 2015, p. 1581). The literature considers the relationships between franchising and entrepreneurship (Tuunanen, 2007, pp. 213–233) and the role of trust and satisfaction with franchise partnership. “When franchisees develop trust in the franchisor on the basis of their role performance and cultural sensitivity, franchisees are likely to express satisfaction with franchising. This satisfaction, in turn, is likely to reduce conflict between franchisors and franchisees, and lead to the upholding of long-term relationships.” The development of trust depends on the franchisor’s ability to perform their partnership role, demonstrate cultural sensitivity and communicate with franchisees effectively (Altinay et al., 2013, p. 727). These relationships were summarised as follows: “Understanding why franchisees succeed is important because franchising is important for economies and because franchisees play a key role in enhancing franchisor success” (Wu Chih-Wen, 2015, p. 1586).

Attention is also drawn to the distinction between local and international coverage and the franchising strategy as such (Hoffman et al., 2014, pp. 101–114; Lopez-Bayon & Lopez-Fernandez, 2016, pp. 1059–1079; Anuar & Chin, 2016, pp. 274–280). Franchising strengthens the company’s position and development, creates jobs and facilitates the extension of market scope through internationalisation (Hoffman et al. , 2014, pp. 101–114). The issue of reducing transaction costs (and market entry costs, including advertising costs) and savings on the equity used is significant.

The results of research into how franchising functions among SMEs in Poland indicate that the 2003–2013 period saw a rapid increase in the interest in and use of franchising (Table 3). In those years, the number and growth rate of franchise brands were increasing swiftly: from 216 to 998 brands, representing a fourfold rise. The number of franchise businesses was also growing dynamically: from almost 12 thousand in 2003 to 63.5 thousand in 2013, meaning more than a fivefold increase. This implies that SMEs increasingly frequently treated franchising as an important factor in reducing the probability of bankruptcy.

USE OF FRANCHISING IN THE OPINION OF ENTREPRENEURS

A group of entrepreneurs representing two DIY franchise chains in Poland was researched. The data were collected nationwide based on a group administered questionnaire in the second half of 2017. The results of quantitative and quantitative analysis were obtained by evaluating answers given in the five-point Likert scale. Variable continuous and discrete quantitative features were analysed on a sample of $n_{ij}=80$ entrepreneurs (50% from each franchise chain, designated as $n_i=FBM$ and $n_j=FM$). 99.2% of the respondents run small enterprises, employing up to 35 people; only one of the entrepreneurs from the n_j set employs over 50 people. Most of them (48.75%) conduct business in cities of 5.000 to 50.000 inhabitants, followed by cities of up to 150.000 inhabitants (36.25%) (Table 4).

Table 4. Sample size in terms of quantitative and qualitative criterion
(Source: Own research)

| Type of DIY company | Number of inhabitants | | | | | | | |
|----------------------------|-----------------------|-------|----------|--------|----------|--------|----------|-------|
| | ≤5 | | [5-50) | | [50-150) | | ≥150 | |
| | quantity | share | quantity | share | quantity | share | quantity | share |
| FBM (x_i) | 2 | 2.50% | 20 | 25.00% | 13 | 16.25% | 5 | 6.25% |
| FM (x_j) | 1 | 1.25% | 8 | 10.00% | 16 | 20.00% | 5 | 6.25% |

The structure of the surveyed group indicated that 90.00% of the respondents had previously had a bankrupt business. Most did not want to migrate to look for other opportunities. Therefore, it was decided to analyse these factors. A thesis was formulated: H_0 - variables are independent – the choice

of location does not depend on the type of franchise chosen. The critical value at significance level $\alpha=0.05$, with three degrees of freedom, is 7.815, while the statistic test value is $n_{ij}=0.7489$. Therefore, the hypothesis should be accepted as there is no stochastic dependency in this case, and no grounds to reject H_0 . The relationship between the choice of franchise chain and survival in the market was examined in the same way, with H_0 – distributions are independent (Table 5). The group of surveyed SMEs operating for over 10 years is 67.5%. The result of the study showed p-value at 0.0774, therefore statistically there is no reason to reject the hypothesis that the survival of franchise companies increases with the number of years of market presence.

Table 5. Franchise survivability by chain

(Source: Own research)

| Type of DIY company | Franchise survivability [in years] | | | | | | | |
|-------------------------------|------------------------------------|--------|----------|-------|----------|--------|-----------|--------|
| | ≤ 3 | | [3-5) | | [5-10) | | ≥ 10 | |
| | quantity | share | quantity | share | quantity | share | quantity | share |
| FBM (x_i) | 5 | 12.50% | 1 | 2.50% | 12 | 30.00% | 22 | 55.00% |
| FM (x_j) | 1 | 2.50% | 1 | 2.50% | 6 | 15.00% | 32 | 80.00% |

CONCLUSIONS

The increasing number and growth rate of bankrupt companies in Poland is an incentive to undertake research in this area. This phenomenon is primarily visible among micro-, small and medium-sized enterprises. Their survival rates are also low – only 30% remain active in the market after the initial five years. Due to the role of SMEs in today’s market economy, as evidenced by their contribution to basic macroeconomic indices including GNP, employment and exports, they are a crucial element in building contemporary economies worldwide.

The reasons for SME bankruptcies are manifold and associated with both the quality of financial management and economic activity. Because of their qualitative characteristics, most notably a distinct type of financial management, micro-, small and medium-sized enterprises differ markedly from large companies. They hold insufficient equity, hence their creditworthiness is lower, resulting in difficulties in accessing third-party capital, especially bank credit. In addition, those enterprises generally do not use capital market instruments. As suggested by the research findings, the prime goal of SMEs is to maintain financial liquidity, apart from earning profit. This makes companies seek simple sources of financing chiefly in the form of not paying the amounts due or paying them late. This situation, in turn, produces certain effects for their counterparties’ finances. Therefore, the almost elevenfold increase in factoring is positive as it helps conduct an active trade credit policy and maintain financial liquidity. This trend was also accompanied by intensive growth of franchise brands (462%) and the number of new franchise businesses (534.3%). It may thus be concluded that SMEs seek ways of reducing the scale of bankruptcies by utilising elements of financial management and selected forms of economic activity.

A decrease in the number of SME bankruptcies is also associated with the development of appropriate policies for micro-, small and medium-sized enterprises at the national, regional and local levels. These include financial management solutions such as credit guarantees, incentives for micro- and small enterprises up to the fifth year of operations, being the most critical period for their survival, or provision of stimuli to grasp the opportunities offered by the capital market.

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