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Additional information and an imprint – p. 109

CONTENTS

From the Editorial Committee	5
Magdalena BOCHENEK: Balanced Scorecard in Strategic Management Process	7
Łukasz JUREŃCZYK: Investments of the People's Republic of China in the Afghan Mining Sector	17
Paweł KACZMARCZYK: Cluster Analysis of Voivodships in regard to Social Media Usage in Enterprises at the Background of EU States	27
Rafał KLÓSKA: Proinnovative Regional Development in Poland in the Second Decade of the 21st Century in a Statistical Context	47
Stanislav KRIŽOVSKÝ: Combating Terrorism in the Slovak Republic	57
Piotr NIEDZIELSKI, Magdalena ZIOŁO: Tariff as a Tool for Financing Public Transport in Cities	65
Kornelia OSIECZKO: Management of Cargo Transport at Airports	81
Hanna SOMMER, Grzegorz ZAKRZEWSKI: Responsibility as a Determinant of the Activity of Contemporary Entrepreneurs	91
Bogdan MRÓZ: Overview of the Book “Compliance in Multinational Corporations. Business Risks in Bribery, Money Laundering, Terrorism Financing and Sanctions”, by Fabian M. Teichmann and Bruno S. Sergi, Emerald Publishing, 2018	105
Additional information	109

From the Editorial Committee

We are giving you the next 26th (1/2019) issue of the Quarterly of the Faculty of Management of the Rzeszow University of Technology entitled “Modern Management Review”.

The primary objective of the Quarterly is to promote publishing of the results of scientific research within economic and social issues in economics, law, finance, management, marketing, logistics, as well as politics, corporate history and social sciences.

Our aim is also to raise the merits and the international position of the Quarterly published by our Faculty. That is why we provided foreign Scientific Council, as well as an international team of Reviewers to increase the value of the scientific publications.

The works placed in this issue include many assumptions and decisions, theoretical solutions as well as research results, analyses, comparisons and reflections of the Authors.

We would like to thank all those who contributed to the issue of the Quarterly and we hope that you will enjoy reading this issue.

With compliments
Editorial Committee

Magdalena BOCHENEK¹

BALANCED SCORECARD IN STRATEGIC MANAGEMENT PROCESS

Balanced scorecard is a concept that enables comprehensive strategic management in an enterprise. The analysis of literature allows to state that balanced scorecard evolves continuously, because of which it enjoys a great interest from as well theoreticians as practitioners of this issue. This modern concept allows converting the strategy of the enterprise into operational activities and objectives. The main purpose of the article is to work out an original proposal of measures of balanced scorecard for non-profit unit based by the example of community centre. The genesis of balanced scorecard, its essence, functions performed in the enterprise and the possibilities of using it in various types of organizations are presented in the article. Also proposal of strategic goals and measures of balanced scorecard for community centre is depicted in the article. Balanced scorecard is flexible and universal method, thanks to which it effectively fulfills the objectives set by managers of the organization.

Keywords: balanced scorecard, strategic management, enterprise.

1. INTRODUCTION

In turbulent environment that we are observing currently, it is particularly important for an enterprise to assess comprehensively and measure its activity. Traditional measures fulfilled their role well in the past, but now information about finances of the enterprise in the context of the past is not enough. Managerial staff also needs to use data concerning activities that can change financial position of the entity in the future. It should be remembered that there is not any universal indicator that would perfectly describe each aspect of activity of the enterprise. These days the management of economic entity requires broad view in order to perceive the enterprise from various points of view simultaneously (Sobańska [red.] 2003).

The right evaluation of the strategy implemented in the enterprise requires appropriate selection of methods of measuring effectiveness of activity of the unit in its various areas in long period. We are talking about such measures that enable monitoring current results of activity related to the implementation of strategy and the achievement of mission of the enterprise. An effective and modern concept of the implementation of strategy of the organization is balanced scorecard (BSC) (Nowak, 2009).

The main aim of the article is to work out an original proposal of measures of balanced scorecard for a non-profit unit by the example of community centre. The essence and the

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genesis of the concept of BSC were described, then its characteristic and development in terms of fulfilled role in economic unit were presented. In the last part of the article simplified model of BSC for such institution as community centre, i.e. non-profit organization was proposed. Following research thesis was formulated: balanced scorecard is a method of management accounting supporting the implementation and realization of strategy in non-profit units by the example of community centre. Research methods used in the article are the study by action and critical analysis of literature.

2. THE ESSENCE OF BALANCED SCORECARD

Balanced scorecard is a concept of the implementation of strategy in the enterprise, it consists in converting the mission, the vision and the strategy of the organization into measures and quantitative objectives (PierścioneK, 2011). Balanced scorecard or in other words strategic scorecard is more and more popular method, which allows converting the main strategic objectives into detailed operational tasks. The basic objective of BSC is to coordinate and combine financial results of the enterprise with perspective development and market successes (Kirejczyk, 2008). Some authors also call BSC in other names. It is believed that it is one of the most frequently described and the most widespread concepts of measurement of achievement within management accounting (Sobańska [red.] 2010).

In the second half of the 20th century, the search for an instrument that could be the basis for a comprehensive assessment and measurement of results in the organization began. In the enterprise Analog Devices, Inc. the attempt was made to implement new solutions. This production enterprise was established in 1965 in Cambridge and since its establishment its sales increased significantly, but since 1984 its financial results began to deteriorate visibly. From this moment the enterprise implemented various techniques, such as TQM, half-life or finally corporate scorecard, which is a tool for broader assessment and measurement of results (Nita, 2008). Next R.S. Kaplan and D.P. Norton, who are considered to be precursors of balanced scorecard undertook research in this direction. In 1992 they published scientific article in the *Harvard Business Review* on BSC (Kaplan, Norton, 1992). Then they published further publications related to balanced scorecard, among other things:

1. Putting the Balanced Scorecard to Work in 1993.
2. The Balanced Scorecard Translating Strategy into Action in 1996.
3. Strategy maps: Converting intangible assets into tangible outcomes in 2004.

A strategy is a plan or a model that combines main policies, objectives and sequences of activities of the organization into coherent whole. The strategy also helps to allocate resources and manage them in effective and unique way using for it information about competencies and weaknesses of the enterprise, as well as anticipated movements of competitors on the market and changes in the environment. Balanced scorecard, which was worked out correctly, should answer following questions related to strategy (Sobańska, 2010):

1. Is the adopted strategy implemented?
2. Was the implemented strategy appropriate?

Strategy determines the uniqueness of organization, thanks to it given enterprise can be clearly distinguished from other enterprises existing on the market. Just for this reason strategy is a key tool of management of each enterprise. Balanced scorecard allows converting strategy of economic unit into internally coherent set of measures and objectives necessary to implement economic strategies (Lew, 2015).

Designing BSC for given enterprise requires from its specialists of management accounting and managers (Jaruga, Kabalski, Szychta, 2014):

1. Presenting strategy using map of strategy. The concept of strategy map was created by the proponents of BSC R.S. Kaplan and D.P. Norton (Kaplan, Norton, 1992).
2. Designing coherent strategy designed for the implementation of objectives of activity set on the basis of adopted visions and missions of the enterprise.
3. An appropriate selection of measures necessary for measurement of achievements of the enterprise in the implementation of strategic objectives and purposes divided into groups called perspectives.

BSC does not have to be treated only as balanced measures of the effectiveness of undertaken in the enterprise long-term activities, but also as a kind of system of strategic management, which is to support the implementation of strategy of the unit. In such depiction BSC helps to work out the vision of the company and to gain support for implemented strategy and vision. Balanced scorecard also explains measures and strategic objectives and allows to integrate them with management system. It also supports taking strategic initiatives as well as planning and setting specific objectives. BSC supports the improvement of systems aimed at monitoring the implementation of strategy and development of the enterprise (Nowak, 2009).

3. CHARACTERISTIC OF BALANCED SCORECARD

Strategic objectives of the organization and measures of their achievement were divided into groups called perspectives. Perspectives distinguished by the authors include all areas of activity of economic entities, i.e. (Lew, 2015):

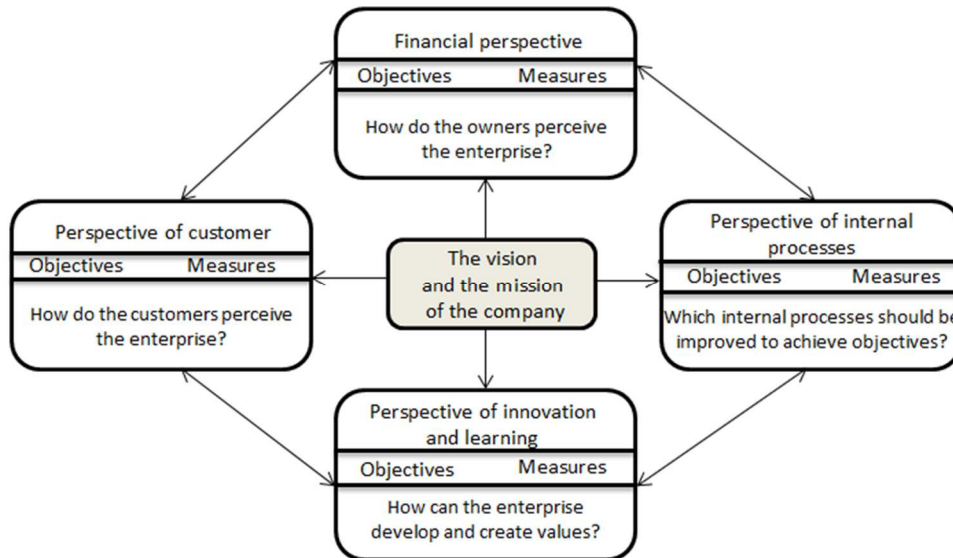
1. Financial perspective.
2. Perspective of the customer.
3. Perspective of internal processes.
4. Perspective of innovation and learning.

Analyzing picture 1 it can be stated that balanced scorecard allows the enterprise to monitor not only financial results, but also satisfaction of the customer, the ability of the organization to develop and the results of business processes (Kotapski, Kowalak, Lew, 2008, p. 193). It should also be emphasized that BSC is flexible method, which can be effectively adjusted to the needs of specific organization. Also perspectives distinguished in can look variously depending on the type of activity. The structure of BSC will be different in profit-oriented enterprises and in non-profit entities.

Financial perspective of BSC refers to the financial situation of economic entity. It is designed for determination of possibilities and conditions of creating values for the owners based on free cash flows, among other things using economic added value (Zyznarska-Dworczak, 2012).

Perspective of the customer is aimed at answering the question, how our organization is perceived by the customers. Customer focus is most often the basic element of creating strategy in modern enterprises. The reason for it is very simple, it results from the fact that appropriate relations of the enterprise with the customers allow to achieve revenues, and consequently contribute to achievement of financial objectives of the enterprise Świdarska [red.] 2010). In this perspective there are specific relations between measures. Satisfied customers influence gaining new customers and retaining already acquired customers.

While retention and acquisition of customers allows to increase financial effectiveness of customer service (Piosik, 2006).



Picture 1. Perspectives of balanced scorecard

Source: own study on the basis of (Kaplan, Norton, 1996; Sobańska, 2003).

Perspective of internal processes is next link of the construction of BSC. It contains key activities and processes needed to achieve the objectives set in financial perspective and perspective of the customer. For effective meeting interests of owners and customers the enterprises have to focus not only on reduction of costs and duration and improvement of quality of operational processes (Nita, 2008). Within perspective of internal processes the most often used measures are: the number of newly implemented solutions, expenditures on research and development, revenues from sales of products introduced to the market, efficiency of production, costs of operational processes, quality of products and effectiveness of processing (Jaruga, Kabalski, Szychta, 2014).

Within perspective of innovation and learning skills and resources are identified, which given economic unit has to develop to guarantee himself possibilities of long-term growth. Processes of learning are the source of development of skills and resources of economic unit. The ability of organization to develop and learn depends on three factors: systems, staff and procedures (Pierścioneek, 2011). Measures depicted in this perspective can be: turnover of key employees, satisfaction of employees, expenditures on their training courses, time necessary to work out new product, or the number of employees improving their qualifications (Jaruga, Kabalski, Szychta, 2014).

To main features of BSC can be counted the balance between set objectives and measures in the different perspectives and their connection by means of cause and effect relationships. Connection of objectives and their measures from particular perspectives in logical way makes employees aware that improvement of results in one perspective allows to achieve better results in other areas. Final result of all achieved objectives and taken

activities should be achievement by the owners satisfactory return on invested capital. On this basis it can be stated that taking activities in perspective of learning and growth, perspective of processes and perspective of the customers determines results achieved in financial perspective. Balancing objectives in particular perspectives prevents unfavorable phenomena inside the enterprise, for example phenomena consisting in it that objectives pursued within one perspective could be achieved at the expense of others. For this reason in balanced scorecard measures concerning as well activities related to the past as these measures, which can influence future results of the enterprise should be contained. Thanks to this the enterprise will defend itself against a situation, in which it shows short-term profits and neglects in this way investments with developmental character (Nowak [red.] 2008).

Four perspectives included in BSC enable linking operational and strategic objectives and also they allow to monitor comprehensively operational processes for their compliance with selected strategy of the enterprise. BSC perceived in this way can be the basis of the system of strategic management of economic entity. This is reflected by following processes (Sobańska, 2003):

1. The explanation of strategy and vision.
2. The coordination and the communication.
3. Planning.
4. Feedback and learning.

It should be emphasized that BSC is a concept that requires the concentration on strategy, teamwork and strategic learning using rather feedback than control and reporting. The system of strategic management in this context requires continuous testing strategy, management control of strategy and its adaptation to permanently changing conditions (Nita, 2008).

4. USING BALANCED SCORECARD IN NON-PROFIT ENTITIES

In non-profit entities the layout of the BSC should be above all oriented towards meeting the requirements of recipients (i.e. local community, founders of financial assets or recipients of services (Jaruga, Kabalski, Szycha, 2014). In Polish reality it was also attempted to adapt BSC to the needs of management of various types of non-profit organizations. M. Nieplowicz analyzed 65 cities with district rights and proposed the use of concept of BSC (Nieplowicz, 2006). In 2017 also M. Nieplowicz proposed to adapt BSC to the needs of management of museum on the example of Historical Museum of the City of Kraków (Nieplowicz, 2013). P. Urbanek in his article indicated examples of perspectives within balanced scorecard for various universities (Urbanek, 2017). J. Świerk analyzed in her research the implementation of BSC in various institutions, including hospital, common court, or housing association (Świerk, 2017).

Continuous interest of many researchers and authors in the implementation of a balanced scorecard in non-profit entities proves that this topic is needed and the concept of BSC is flexible enough that it can be successfully implemented in this type of institutions.

Community centres are organizations operating in Poland that need management in the long-term. The development of private institutions carrying out similar tasks and goals, such as cinemas, clubs and venues organizing occasional events, causes that cultural centers have a problem with finding people interested in their activities. Community centres are found in many places in Poland, and each individual unit employs several or a dozen employees.

These units benefit from limited financial resources, and in recent years, they have been supported by EU subsidies. However, the development concerned the reconstruction and renovation of the buildings themselves, while there is still a lack of action and development plan for these units in the long-term perspective. Wherefore for organizations operating in Poland, such as community centres, it is possible to propose the implementation of balanced scorecard. Following perspectives within BSC were distinguished for the institution of community centre: perspective of recipients, perspective of involvement of employees, financial perspective, perspective of internal processes, perspective of development. The proposal of set of illustrative objectives and measures for community centre was presented in table 1.

Table 1. Illustrative objectives and measures of balanced scorecard for community centre

Strategic objectives	Measures
Perspective of recipients	
The increase of satisfaction of local community	<ul style="list-style-type: none"> • indicator of satisfaction of inhabitants • number of complaints of inhabitants
The improvement of availability of offered services	<ul style="list-style-type: none"> • number of inhabitants using offered services • indicator of level of knowledge of inhabitants about the type of offered services
Perspective of involvement of employees	
The increase of initiatives taken by employees	<ul style="list-style-type: none"> • number of taken initiatives by employees • level of granted bonus for employees
Building better relationships between local community and employees	<ul style="list-style-type: none"> • Indicator of inhabitants, who use constantly offered services • opinion of inhabitants about involvement of employees(questionnaire surveys)
Financial perspective	
Ensuring assets for covering costs of activity	<ul style="list-style-type: none"> • level of assets granted by national budget • level of assets obtained from the subsidy
The growth of financial stability	<ul style="list-style-type: none"> • indicator of liquidity • indicator of profitability
Perspective of internal processes	
The improvement of quality of taken initiatives	<ul style="list-style-type: none"> • number of obtained certificates • number of organizations cooperating with community centre
The improvement of efficiency and quality of work of employees	<ul style="list-style-type: none"> • number of training courses, in which employees participate • indicator of rotation of employees
Perspective of development	
Making possessed resources more attractive	<ul style="list-style-type: none"> • The value of assets transferred for development of particular initiatives • the value of assets transferred for renovations
Introduction of innovations	<ul style="list-style-type: none"> • number of bought equipment related to modern technology • number of training courses of employees concerning modern technologies

Source: own elaboration.

Community centres are institutions, which base their activity on cooperation with society, especially on local scale. On the basis of own observations main strategic objectives and measures are distinguished in Table 1; the recipients of services and initiatives undertaken by community centres are mostly inhabitants of local places. BSC is a tool that could help the management of particular community centres to manage their organization. In balanced scorecard for community centre, perspective of recipients was considered to be the most important perspective (which in basic model of BSC corresponds to perspective of the customers). The activity of community centres is ensured thanks to recipients, who are most often inhabitants of given local community. Another very important perspective at BSC for community centre is perspective of involvement of employees. Employees together with recipients guarantee the existence of community centres. By creating effective strategy for community centre it is important to take human factors into consideration.

Thanks to the wording of BSC, individual community centres should develop specific objectives of their organization. The presented model is a general model, which should be adapted to the local conditions of a given community centre. Certainly, managers should focus on activities that will satisfy and keep their recipients. In one community, recipients may prefer more to organize various events, in other exhibitions or activities related to art. In order to obtain this information, an interview and surveys will help, which can be successfully carried out by the employees of a given unit, because those who are closest to the given community and often have relations with recipients of community centre services.

Proper implementation of BSC in a community centre will ensure that these non-profit units function and prosper in the long-term perspective, that is the next few years. *Ipsa facto*, the research thesis put forward was confirmed. However, it should be remembered that the process of implementation of BSC in specific entity requires wider analysis and in-depth research.

5. CONCLUSIONS

Community centres are non-profit entities where there is a lack of proper management in the long-term perspective and the use of strategic management methods. One of the methods that would enable effective strategic management of community centre is a Balanced Scorecard.

BSC correctly implemented in a community centre will allow for the identification of five basic perspectives: recipients, involvement of employees, financial, internal processes and development. These are the main areas on which community centres should focus to ensure long-term and effective functioning. The order of the listed perspectives reflects the importance of the given perspective.

In the created model of BSC, the perspective of recipients and the perspective of employee involvement were considered the most important perspectives. The recipients of services offered by a given community centre are residents of a given local community. A community centre is a non-profit entity that without the recipients would lose the sense of action. The more people interested in initiatives taken in community centres, the greater the possibilities of action, as well as the motivation of employees whose involvement is also very important in the development of community centres. Employees have the greatest contact with the inhabitants of local communities and often form relationships with them. It is primarily the employees who care about what atmosphere prevails in a particular community centre and what initiatives are being taken. An employee, who knows the recipients of

services well, can effectively choose the methods of action and events organized so that the local community is satisfied.

The financial perspective was deemed to be less important than recipients and involvement of employees, but it should be remembered that without financial means a community centre could not exist. The basic source of financing are funds received from the state budget. However, the managers of a given unit may seek additional sources of financing. Most often they are EU grants and various types of sponsors, often local investors who willingly support culture and tradition.

The perspective of internal processes and the financial perspective are areas supporting other perspectives. It is important to provide high quality services offered by the community centre, because we are currently observing progressive globalization. Local recipients have easy access to various types of similar services offered by other units. Community centres, despite their attachment to tradition and culture, should meet today's innovations, which in many cases will improve the availability and quality of services.

The presented model of BSC for community centres is a general model, which should be extended and adapted to a specific unit.

The barrier to introducing the model in practice may be insufficient knowledge of the managers of community centres. Often these are people who have no experience in implementing BSC, and have never even heard of such a method. A poorly implemented model will not fulfill its functions correctly. However, it may not be possible to hire a specialist because community centres have limited financial resources.

Due to the small amount of financial resources in cultural centres, it is important that all employees of the unit are involved in the implementation and operation of the BSC. Managers should therefore use additional motivation techniques if necessary.

After completing the implementation of BSC, managers should remember to constantly monitor and possibly adjust the model to the changing external and internal conditions of the unit. The BSC developed at a given moment will require modifications and improvements.

SUMMARY

Balanced scorecard is most often perceived as an instrument of implementation of an strategy of entity and on the other hand as the system of strategic management. By means of BSC the process of creating value in organization can be monitored and it is told about communication role of this concept. R.S. Kaplan and D.P. Norton indicate that the original premise of creation of BSC was limitations of commonly used traditional financial measures, which enabled to measure past achievements, but there was a lack of an instrument oriented on future. In our times the range of usefulness of BSC increases continuously and it contains three main areas, thanks to which it can be stated that balanced scorecard is (Nita, 2008):

1. System of comprehensive measurement of achievements of the enterprise in coherent way.
2. Instrument of visualization, description of strategy in the entity.
3. Comprehensive system enabling strategic management of the enterprise.

Balanced scorecard is also criticized by some authors. They argue that this concept lacks appropriate visibility of basic source of profit of the enterprise, which are its employees. BSC focuses above all on strategy of the entity. However the evolution of this concept led

to positive changes, so that BSC concentrates also on quantification of intangible assets, which include to a large extent intellectual capital (Lew, 2015).

Since the beginning of the 1990s a lot of time passed, but BSC is still perceived as instrument of modern management of the enterprise. It happens so, because it is a concept, which adapts to current market conditions. The universality of BSC allows it to apply it in many enterprises and other types of entities. In the article exemplary concept of BSC was presented, which can be used in community centres operating on Polish market. It is one of many examples of the use of balanced scorecard in non-profit organizations. More and more recent scientific publications on this concept allow to believe that it will develop continuously.

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Lukasz JUREŃCZYK¹

INVESTMENTS OF THE PEOPLE'S REPUBLIC OF CHINA IN THE AFGHAN MINING SECTOR

The purpose of the article is to present and evaluate the investment management of enterprises from the People's Republic of China in the Afghan mining sector in the broader economic and strategic context. It presents the causes, circumstances, barriers and prospects for the implementation of investments in the extraction of Afghan copper, energy raw materials and other minerals. So far, the largest investments in Afghanistan have been made by large state-owned enterprises, including Metallurgical Corporation of China and China National Petroleum Corporation. The success of their investments is currently a big question mark, and the involvement of other Chinese enterprises in the Afghan mining sector and other segments of the economy depends on this. The research problem is included in the question of the role of Chinese investments in the Afghan mining industry in Beijing's policy towards that country and neighboring regions of Asia.

Keywords: Afghanistan, People's Republic of China, mining industry, investment management, copper, energy resources.

1. INTRODUCTION AND METHODOLOGICAL ASSUMPTIONS

In Afghanistan a significant amount of natural resources is located, the approximate level of which is currently being determined. International geology experts most often estimate the value of Afghan mineral deposits in the range between one and three trillion USD (International Business Publications, 2012). They include metal deposits, with significant lodes of copper, iron and lithium, construction and chemical raw materials, gemstones as well as significant reserves of energy resources, including crude oil, natural gas and coal. Due to the turbulent history of Afghanistan, these raw materials are almost intact. The increasing global competition of the states for exhausting natural resources caused that Afghanistan has become a place of interest for investors from various parts of the world, including the People's Republic of China (PRC).

China's investment in the mining sector in Afghanistan is a consequence of Beijing's two strategic goals in Central Asia. First of all, it is to provide its dynamically developing economy with a diversified and constant supply of natural resources. Secondly, it is the stabilization of neighboring countries through economic cooperation. Investments in the extraction of natural resources and intensification of trade are intended to give benefits to all parties of the cooperation. Maintaining the two main values in the PRC policy in the 21st

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century, i.e. security and development is to enable China to continue its economic expansion in Asia and other parts of the world.

Sustaining development and tightening of economic relations limit the risk of appearance of serious internal and external instability and the outbreak of armed conflicts. China, which needs natural resources, makes significant capital investments in the mining sector of Afghanistan. Thanks to this, it provides itself with a new source of raw materials, located in the close vicinity. The import of minerals is offset by the export of industrial goods, which increases the demand for Chinese products. This cooperation also brings tangible benefits to Afghanistan. First and foremost, it derives income from the sale of raw materials and tax revenues. In addition, new jobs are created in Afghanistan in the mining sector and related industries. An additional incentive for Afghanistan is the involvement of Chinese enterprises in the development of the country's infrastructure, mainly in the field of transportation. The Chinese authorities also provide limited assistance to the government of Afghanistan. Common goals, i.e. security and development, and mutual benefits motivate partners to cooperate. Economic activities are supported by diplomatic efforts, and all this should lead to speed up the process of stabilization of Afghanistan and to strengthen the bilateral relations. Looking broader, this cooperation is also intended to strengthen security throughout entire region. An important aspect that facilitates the Sino-Afghan relationship is non-interference in the internal affairs and full respect of the adopted systemic solutions.

The purpose of the article is to present and evaluate the investment management of companies from the People's Republic of China in the Afghan mining sector. The research problem concerns the role of Chinese investments in the Afghan mining sector in Beijing's policy towards Afghanistan and Central Asia as a whole. The article outlines three main theses. First of all, investments in the Afghan mining industry are the main measure used by Beijing to stabilize the country. By these investments, however, China especially wants to increase its influence in the country and in the Central Asia where it competes with Russia, United States, India and regional powers. Secondly, these investments are very risky, mainly due to the unstable security situation in Afghanistan. Thirdly, despite the potentially large economic and political benefits, Chinese investments in Afghanistan are secondary to its investments in many other states of Central Asia. Afghanistan, however, is to play an important role in the development of China's economic cooperation with the countries of this part of Asia. The outlined research problem is a part of the broader problem of China's search for resources in developing countries. In that field particularly important is a book edited by Fengshi Wu and Hongzhou Zhang, *China's Global Quest for Resources: Energy, Food and Water*. The issue of Chinese investments in the Afghan mining sector is relatively new and research in this area should be carried out on an ongoing basis. The article uses the method of source analysis.

2. PRC INVESTMENTS IN THE EXTRACTION OF AFGHAN COPPER

In 2015, the global consumption of purified copper reached the level of 23 million tons. Its largest world consumer was China, using 11.3 million tons, which was almost half of the volume (International Copper Study Group, 2016). A similar situation on the copper consumption market has been maintained for several years. For this reason, China is interested in the extraction of huge deposits of Afghan copper. They are located in the copper basin of Afghanistan - Mes Aynak in the province of Logar in the south-eastern part of the country. Mes Aynak in translation from Pashto literally means "little source of copper".

This name, however, does not reflect reality, because in practice it may contain as much as 6 million tons of copper. According to estimates, the total value of copper and other resources located in Mes Aynak can reach up to 40 billion USD (Gartenstein-Ross, Trombly, Barr, 2014).

In 2007, the Kabul authorities accepted the offer of the Metallurgical Corporation of China (MCC) and Jiangxi Copper Company (JCC) for the expansion and exploitation of the Mes Aynak mine. MCC won the contract by outbidding the offer of mining corporations from eight countries, including enterprises with American, Russian, British and Canadian majority capital. Western observers reported that the tender was settled by a number of corruption activities by the MCC towards Afghan officials (Gartenstein-Ross et al., 2014). Among others, the minister of mine affairs -Mohammad Ibrahim Adel was accused for accepting a bribe of 30 million USD (Zaborowski, 2012). Allegations of this kind may be legitimate because Afghanistan is one of the most corrupt countries in the world.

When applying for a contract, the Chinese company promised to implement a number of accompanying investments, which competitors could not afford to propose. MCC made a promise to expand the infrastructure around the mine, including the construction of a coal mine and a 400MW coal power plant, the expansion of the railway network, the construction of schools, hospitals and even mosques (Ali, 2015). This commitment seemed credible because MCC is China's leading engineering and construction company, and investment in the mining industry is a part of its development and diversification (Downs, 2012). All of the funds invested in Afghanistan were to reach 10 billion USD. At the moment, the Chinese withdrew from the promise to expand the railway network and build coal mine and coal-fired power plant. It is a consequence of a number of problems that have appeared on the way to the implementation of the project (Gartenstein-Ross et al., 2014).

According to the contract, MCC and JCC were to invest 4 billion USD in five years just in the copper mine Mes Aynak. Therefore, at that time it was to be the largest foreign investment in Afghanistan. As a result of the expansion, the mine Mes Aynak is to be the second largest copper mine in the world, after the Escondida mine in Chile (Tripathi, 2016). The Afghan government is to earn 808 million USD on this investment for granting rights to extract copper and about 60 million USD annually for 30 years from taxes (Hausheng, 2012). The profit for MCC is expected to reach from several to several dozen billion USD, depending on the price of copper in the global market. JCC operating in the steel industry and having 25 percent shares in Mes Aynak will have guaranteed supplies of copper. This will allow it to become independent from the purchase copper from foreign producers and thus reduce the impact of fluctuations of its prices on the functioning of the enterprise. In addition, thanks to the planned annual supply of copper from Mes Aynak at the level of 200,000 tons JCC is to increase production by 50 percent. According to the agreement between MCC and JCC, the second of these entities has the pre-emption right of at least 50 percent of the copper mined in Mes Aynak (Downs, 2012).

The additional benefits for China and Afghanistan are new workplaces. The scale of using the local workforce is, however, debatable. Investments of Chinese enterprises in Africa show that they prefer to employ their own, better qualified and more disciplined employees (Gajda 2015). Nevertheless, at various stages of the investment implementation, there will be job for 3-10 thousand of people from both countries. Moreover, thanks to the development of related industrial sectors, potentially new jobs can be created for even tens of thousands of Afghans (Hynek, Eichler, 2012; Downs, 2012).

The enterprise in Mes Aynak can bring huge profits to investors, but it is burdened with a very high degree of risk. At best, the investment was supposed to start generating income after 7-10 years. This optimistic scenario turned out to be unreal, *inter alia* due to the location of the archaeological site in the mine area with Buddhist chapels, monasteries, statues and frescoes dated to the 5th and 6th centuries and signs of much older settlements dating back to the Bronze Age. The Chinese had to allocate 2 million USD to secure the artifacts there by the French Archaeological Mission in Afghanistan, to avoid further significant delay in the investment (Gartenstein-Ross et al., 2014). The launching of the mining also shifted over time due to a number of disputes and discussions between the MCC and the Afghan government. These included, among others, construction permits, compensation for local villages, ecological requirements for mine heaps, work permits for Chinese workers, the level of duties for Chinese goods used in the implementation of investments, etc. (Crane, Greenfield, 2014). Such large investment will have a negative impact on the environment. First of all, it requires a huge amount of water, which is a scarce resource in Afghanistan. In addition, water and air quality will worsen, but this does not seem to be a significant drawback for Afghan central and regional authorities. A more serious problem is the need to acquire significant land for implementation of investment, which leads to objections of local communities. The workplaces offered to the inhabitants of nearby villages and towns are not always sufficient compensation for limiting access to land, water, wood and other goods. An additional barrier is infrastructure deficiencies that need to be completed so that the mine can function. It requires, *inter alia*, a stable source of electricity, a developed transport network, including roads and a railway line, as well as maintenance facilities.

The most serious problem, however, is the uncertain security situation. Logar Province is one of the most unstable in the country. Major rebel attacks in the vicinity of Mes Aynak occurred in August and September 2012. In August 2014, the offensive in the province of Logar against the International Security Assistance Force (ISAF) was conducted by about 700 rebels. In addition, the Taliban have repeatedly launched rocket attacks on the mine itself to prevent the implementation of this flagship investment for the Afghan government. Next to the Taliban, military actions in the province of Logar are also carried out by militants of other rebel and terrorist groups. For these reasons, the work at Mes Aynak was stopped several times, and the staff was temporarily evacuated to China (Gartenstein-Ross et al., 2014). To meet the expectations of the Chinese side, the Afghan government committed 2,000 soldiers and police officers to the protection of Mes Aynak. Unfortunately, security issues, corruption problems, legal controversies and archaeological barriers cause that so far the MCC can't extract Afghan copper.

Despite the problems with Mes Aynak, companies from China are also interested in the exploitation of Afghan iron ore fields. They took part in a tender to obtain the right to extract this raw material in Hajigak in the Bamyan province (Cordesman, Hess, 2014). The stake was high, because these deposits are not only the biggest in Afghanistan, but also constitute the largest un-exploited iron deposits in all of Asia. They cover approximately 2 billion tones iron ore with an average purity of approx. 62 percent. In this case, however, China lost the competition with foreign competition. In November 2011, the Afghan government handed over four of the five Hajigak blocks to a consortium from India, embracing seven companies operating under the leadership of the state enterprise - Steel Authority of India. This contract can be worth up to 10 billion USD in total. The last of the five blocks was put into operation by a Canadian company - Kilo Goldmines. In May 2016, Afghanistan, India and Iran signed an agreement to build a 900 kilometer railway line to connect the Hajigak

mine with the Iranian railway network. This will allow access to the Iranian sea port in Chabahar, which will enable further transport of iron and other resources by sea. These contracts excluded Chinese companies from competing for biggest Afghan iron ore deposits.

3. PRC INVESTMENTS IN THE EXTRACTION OF AFGHAN ENERGY RESOURCES

In the case of deposits of Afghan energy resources, we can observe a differentiated approach to determining their estimated value. Some experts tend to exaggerate its potential level, without supporting provided data with reliable research. Others present value incomparably lower, based only on expertise carried out decades ago with usage of less advanced research tools than these currently available. Therefore, there is no certainty about the actual occurrence of energy raw materials at the suggested levels (Cordesman, Hess, 2014).

According to the preliminary calculations published in the "U.S. Geological Survey" Afghanistan can contain up to 1.6 billion barrels of crude oil, 16 trillion cubic meters of natural gas and 500 million barrels of liquid natural gas (Afghanistan Ministry of Mines). According to "g|Observer" in Afghanistan there are confirmed, probable and possible natural gas deposits at the level of approx. 5 trillion cubic meters, located in the north of the country. It presents more modest data concerning the oil reserves, estimating its amount at the level of 100 million barrels located, among others, in Angot oil fields. The vast majority of hydrocarbon deposits are located in the north of the country, and in addition, small amounts of them have been identified in the east (*Afghanistan Energy Profile*, 2012). The "CIA World Factbook" contains information about confirmed reserves of natural gas at the level of 49.55 billion cubic meters (Central Intelligence Agency). In turn, "BP Statistical Review of Energy", while discussing the world's oil deposits, did not provide any information about the confirmed resources of this raw material in Afghanistan (British Petroleum, 2012).

Data supported by more detailed geological surveys come mainly from the Soviets, who between 1960 and 1980 identified over 15 oil and gas fields in northern Afghanistan. Only 95 million barrels of oil - confirmed and probable deposits - were considered to be worth exploiting. So far, the symbolic volume of crude oil has been exploited in this region, the average volume of which was up to 500 barrels per day. It was mined mainly in Sar-e Pol province and near Sheberghan in Jowzjan province. To this day, a very small amount of oil is produced there, with usage of primitive retorts for its refining. In the area of Sheberghan there are also the main natural gas deposits, in Khowaja Gogarak, Djarquduk and Yatimtaq. In the mid-1970s, natural gas production in Afghanistan amounted to 275 million cubic meters per day, and when the Djarquduk deposits began to be exploited in 1978, it reached a peak of 385 million cubic meters per day. At present, in this region, small diameter pipelines supply gas to local consumers, and a larger pipe sends it to a 48 MW power plant located in the Mazar-i-Sharif area (*Afghanistan Energy Profile*, 2012).

Along with the dynamic economic development of the People's Republic of China, internal demand for fuels is increasing. China is the world's largest oil importer and also its import of natural gas is rapidly rising. Crude oil is purchased mainly from the Persian Gulf, while natural gas from Russia and Central Asia. The growing demand, however, means that China signs contracts for the extraction of energy resources also in other regions of the world, including Africa and South America. If it is possible to obtain these resources from

Afghanistan, geographic proximity certainly would be in favor. However, it should be noticed that even if the upper levels of Afghanistan's estimate deposits are correct, it may still take several decades to put in production capacity to the level which would guarantee net profits from the investments. This requires the implementation of significant infrastructure investments, and above all depends on the security conditions. Therefore, entering the Afghan market for the extraction of energy resources should be treated as a long-term investment with a high degree of risk.

In December 2011, the China National Petroleum Corporation (CNPC) together with a joint-venture partner, the Afghan company Watan Group, obtained a contract for the exploration and exploitation of oil and natural gas in the basin of Amu Darya, in the provinces of Sar-e Pol and Faryab in northern Afghanistan. It is to take place on three fields - Kashkari, Bazarkhami and Zamarudsay. In this way, the CNPC became the first foreign company which signed a contract to extract Afghan hydrocarbons (Pantucci, Petersen, 2012). CNPC has previously extracted oil and natural gas from the same geological structure in Turkmenistan. The investment in Afghanistan gives China the opportunity to increase the extraction of energy resources as well as to expand the transmission network in Central Asia. In June 2012, the CNPC signed a framework agreement with the government of Afghanistan to determine the viability of building a pipeline from Turkmenistan via Afghanistan to China. This route could also be used to import gas from Iran, in which CNPC got a contract for the exploitation of part of the South Pars, the world's largest natural gas field (Downs, 2012).

The contract for the extraction of Afghan hydrocarbons has been signed for 25 years and is estimated to be worth 700 million USD. For Afghanistan, it is to give a profit of at least 7 billion USD in 25 years (Hausheng, 2012). This is due to the fact that the management of the CNPC agreed on very favorable conditions for the partner. It agreed, among other things, to give Afghanistan 70 percent of profits from the project, 15 percent royalty on oil production and to pay 20 percent corporate tax and additional taxes for the lease of land for investment (Cordesman, Hess, 2014). The CNPC also promised to build an oil refinery in Afghanistan. This means that if the project is implemented, Afghanistan will cease to be almost entirely dependent on the import of energy resources. It would be a significant relief to the Afghan budget, because as an example in 2012 Afghanistan paid about 3.5 billion USD for the import of oil from Russia, Turkmenistan, the United Arab Emirates and Uzbekistan.

Due to the uncertain size of the exploitable fields and the unstable security situation, the CNPC investment is of speculative nature. The Chinese side won the contract without any problems because most potential competitors, including American oil concerns, did not decide to take this risk. By entering the tender, the Chinese hoped that the investment would be successfully implemented because the north of the country seemed relatively calm. In recent years, however, there has been a significant deterioration of the security situation, including in the Faryab province, where extraction is to be carried out. The Taliban attacks increased when in 2012 most of the US special force and the Norwegian Provincial Reconstruction Team withdrew from the province. Although most of the oil fields leased by the CNPC are located in the Sar-e Pol province, the direct proximity to the Faryab province carries a high risk of spreading instability. The Taliban and other rebel and terrorist groups are not the only paramilitary forces that disturb the workers implementing the project. It was also done by the troops of General Rashid Dostum, who tried to force the participation in investment profits. Eventually, an agreement was probably reached between the Chinese company and the Uzbek warlord (Gartenstein-Ross et al., 2014). In October 2012, the

mining process was officially inaugurated. CNPC announced then that from 2013 it would extract 1.5 million barrels of crude oil per year. According to the agreement, until the construction of the refinery in Afghanistan, the extracted oil goes to the refinery in Turkmenistan and is then sold to Afghans and foreign customers (Gacek, 2013).

In the context of acquiring energy resources in Afghanistan, it is worth paying attention to the relations between the People's Republic of China and the United States, because these powers are globally competing for access to hydrocarbons. For the US, the diversification of oil supplies is as important as for China. American entrepreneurs and society are outraged that Chinese companies start investments in Afghanistan, benefiting from the huge US stabilization effort. In July 2012, information appeared that the American ExxonMobil concern is interested in hydrocarbon exploitation in northern Afghanistan. This was to counter criticism from the Republican Party congressmen for the passivity of the United States on the Afghan mining market (Gacek, 2013). So far, however, no concrete action from the American fuel sector giant has been seen. Oil concerns from the US also have plans to extract hydrocarbons in Central Asia states neighboring with Afghanistan. The authorities in Beijing are convinced that Washington wants to establish close economic relations with the countries of the region to limit the ability of China to operate in its immediate vicinity, mainly in the field of energy import (Qassem, 2009). Therefore, Beijing is trying to strengthen relations with the countries of the region in order to push out American energy interests from it. It is also very important for China to limit the influence of its major regional economic competitor – India, both in Afghanistan and, more broadly, in Central Asia. Chinese enterprises invest in local mining markets, as well as expand transmission and communication routes in Central Asia. An increasingly important element in this regional economic network is Afghanistan. The reason is its location, potential raw materials deposits, as well as instability, which, unchecked, may spread to the countries of Central Asia and the western provinces of China.

In Afghanistan there is also coal deposit estimated at 73 million tones. Its majority is located in the north of the country, between Herat and Badakhshan. At the beginning of the 1990s, nearly 100,000 tons of coal was produced in Afghanistan per year. In the following years, however, mining drastically decreased (*Afghanistan Energy Profile*, 2012). Initially, it was the result of a growing civil war between the mujahideen groups. In subsequent years, it resulted from the Taliban's lack of interest in the industrialization of the country. Coal mining in Afghanistan is important because neighboring China is the biggest coal importer in the world. China also has pledged to build a coal-fired power plant in Afghanistan (Tripathi, 2016). As previously mentioned, the investor has suspended plans for its construction. However, it is not out of the question that in favorable circumstances the project will be reactivated.

4. CONCLUSION AND PROSPECTS FOR THE FUTURE

Officially large investments in the Afghan mining industry are based on the decisions of the management boards of Chinese enterprises. The actual originator, however, is most probably the Chinese communist government. That assumption results from a few basic premises. First, the MCC and CNPC are centrally administered state-owned enterprises whose leadership is elected by the Chinese Communist Party (CCP). Secondly, for the Chinese authorities, copper and oil are of strategic importance in the context of stable economic development of the country. Thirdly, the location of Afghanistan causes that its stability is

very important for the safety of Chinese trade routes for energy and mineral resources. Fourthly, China's significant economic presence in Afghanistan limits the growth of influence of the main competitor from the region – India, and global competitor – US (Downs, 2012). Fifthly, it is easier for Chinese enterprises to win large contracts in Afghanistan than for western companies. In contrast, they are not strictly dependent on shareholders, and therefore do not have to be focused on a certain profit. Because they are state-owned enterprises, they also have access to cheaper capital. In addition, they receive much more prominent diplomatic support of their own state authorities than foreign competitors (Downs, 2012).

China's involvement in supporting of the stability of Afghanistan is very limited. PRC is reluctant to engage militarily in Afghanistan. It also distances itself from the possibility of supporting stabilization efforts of NATO in this country (Dobbins, 2014). This raises accusations of the international community towards China that its significant investments in the mining sector are a kind of "stowaways". Negative attitude was not changed by the limited training for officers of Afghan security forces carried out for several years in Chinese universities. After the completion of the ISAF mission in Afghanistan China did not take bigger responsibility for the country's security. On the contrary, it forces the Afghan government to increase its efforts to protect Chinese investments. China wants to avoid dangerous situations, like the one which took place in June 2004, when eleven Chinese construction workers were killed in the Kunduz province in the north-east part of the country (Lanteigne, 2016). In 2012, the Afghan ministry of mining held in disposal 7,000 officers of the so-called mining police, which contributed to the protection of the mining sector only to a limited extent (Gacek, 2013). In this regard, the Afghan government promised to train specialized military personnel to protect foreign workers, mines and pipelines during the implementation of the investments. They protect investments made both by Chinese enterprises, including MCC and CNPC, as well as by companies from other countries. For example they protect a gas pipeline which goes from Turkmenistan through Afghanistan to Pakistan and India (Arduino, 2017).

Increasing the stabilization efforts by China could theoretically lead to improvement of investment security in Afghanistan. However, it should be kept in mind that for China, investing in Afghanistan is of secondary importance in comparison with its economic interests in Central Asia region (Cordesman, Hess, 2014). For the PRC, Afghanistan's security is important mainly so that negative phenomena such as terrorism and separatism could not spread for neighboring territories. This would mean both lowering the level of security of Chinese investments in Central Asia, and could also deepen the instability in the Chinese Xinjiang province (Kam, 2017). From this province, China has access to Central Asia, Afghanistan and also friendly Pakistan. China wants to stabilize and accelerate economic development of Xinjiang province. For this reason, in the western part of the province it has created the Kashgar Special Economic Zone, which may play an important role in the economic cooperation with Central Asia and Afghanistan. Therefore, stabilization of Afghanistan is important for China for both internal and external reasons (Peyrouse, 2016).

The PRC supports the peace process in Afghanistan with soft, mainly economic methods, supplemented by diplomatic activities. Investments in the mining industry of Afghanistan are to be a development stimulus for the country, which may also contribute to the stabilization of the state. Relative calming of the security situation in Afghanistan would enable implementation of PRC's mining projects in this country. In this situation, Afghanistan could eventually become an increasingly important economic partner of China (Hoyt,

2016). If the security situation in Afghanistan improved significantly, China would make much more investment in the Afghan mining industry (Dobbins, 2014). Currently, however, there are no prospects for improving the security situation in Afghanistan. This may, therefore, force Chinese companies to suspend and delay investments. It may also convince China to send its own soldiers to protect investments and strengthen security of Afghanistan. The Chinese authorities are already considering building a military base in the Wakhan Corridor linking the Afghan Badakhshan province with the Chinese Xinjiang province (Pandey, 2018).

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CLUSTER ANALYSIS OF VOIVODSHIPS IN REGARD TO SOCIAL MEDIA USAGE IN ENTERPRISES AT THE BACKGROUND OF EU STATES

The aim of this work is to assess the development of voivodships in terms of social media usage in enterprises with the use of the clustering method. In the theoretical part of the work the rationale of the research study (significance of social media in business activities of post-industrial enterprises) and research methodology were included. The empirical part of the work involves presentation of the research results. So, within the framework of social media usage by enterprises, the rankings of voivodships were created and the clusters of voivodships were detected. Data from the years 2014–2017, provided by the Central Statistical Office of Poland, was used. The results served to compare and assess voivodships in individual years of the period from 2014 to 2017. The comparisons were carried out at the background of data relating to the social media usage by enterprises in EU states in the period 2014-2017.

Keywords: social media, e-commerce, e-recruitment, voivodships, linear ordering, clustering method.

1. INTRODUCTION

In the literature of clustering of voivodships in terms of information and communication technologies (ICT), threads relating to the knowledge-based economy, information society and new managing concepts (e.g. e-business, online marketing, CRM, network management, X-engineering) can be noticed ((Papież, Śmiech [Eds.] 2016, p. 208-217; Wierzbicka, 2017; Kaczmarczyk, 2017, p. 83-96). This is due to the fact that ICT have a significant impact on the implementation and development of the above listed ideas. For this reason, ICT development is fundamental and requires conducting research. In this context, social media (characterised by many advantages) are especially important and these become more significant in socio-economic terms.

The increase in the popularity of social media is in connection with increasingly greater social media usage by enterprises in the business sphere as a new communication channel to inter alia promote their products and brands. On the other hand, social media users recommend interesting content, i.e. they share opinions about brands, products, services and advertising campaigns. Social marketing enables users to create a group of loyal customers and quickly acquire new customers. Through communication on social media, companies

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encourage consumers to share ideas that they can then use to work on the creation or modification of products and services. More and more often social media are useful when a company recruits employees, for example when a company seeks people with narrow specialisation. Social media has also become a tool for improving communication within the company, enabling employees to exchange opinions and ideas.

The aim of the article is to assess voivodships (regarding the development of social media usage in enterprises) on the basis of cluster analysis in each year for the period from 2014 to 2017. The social media usage is understood as the percentage of companies in the following aspects: at least one social medium is used, social networking services are used, blogs and micro-blogs are run, websites enabling making multimedia available and wiki tools are used. In order to achieve the assumed aim, the linear ordering methods (i.e. aggregated measure that was non-based on the pattern of development and aggregated measure based on the pattern of development) and Ward's method were used in the carried out analyses.

Social media can significantly support business activities of post-industrial enterprises. So, the research effects are an information basis about the possibilities of business development in individual voivodships by means of social media. In a broad context, these possibilities translates directly into socio-economic development of particular voivodships. Therefore, the results can be treated as support for the policy of digitisation and building a knowledge-based economy.

2. ROLE OF SOCIAL MEDIA IN CONTEMPORARY ENTERPRISES – THE IMPORTANCE OF RATIONALE OF THE RESEARCH

There is an extensive literature about social media in marketing (Mangold, Faulds, 2009, p. 357-365; Safko, Brake, 2009; Weber, 2009; Meerman, 2010; Castronovo, Huang, 2012, p. 117-134; Chaffey, 2015; Barger, Peltier, Schultz, 2016, p. 268-287; Van Looy, 2016). If one looks at social media as a marketing tool, then these media should be regarded severally and the communication process (which is based on social media) should be seen as an entirety. The reason is that social media are characterised by the following specific characteristics: wide (global) scope, interaction speed, a rather low cost, contribute to significant increase brand awareness, enable entrepreneurs to find suggestions and ideas, contribute to a long-term brand and product loyalty, support e-commerce and improve customer care.

From the above mentioned social media advantages, it is worth emphasising content about supporting e-commerce by social media. One can consider this support in the indirect or direct meaning. The first one is expressed as achieving high activity (positive opinion about brand and products) on websites and attracting as many fans as possible. Interesting data related to influence of social media on e-commerce are contained in the report of the Chamber of Digital Technology in Poland. According to the report, in 2016 in Poland, 61% of social media users posted opinions and information about their purchases online by means of these media. In the same year 76% of social media users stated that when they made purchasing decisions, they were guided by positive opinions of their friends. Under the mentioned data, the number of brand fans has an impact on perceiving a particular brand (i.e. whether it is trustworthy or not). Nearly 50% of social media users declared it. At the same time 60% of social media users stated that they "like" and "observe" various brands. Therefore, the above data can be treated as data related to the indirectly support of e-commerce by social media. The directly supporting e-commerce by social media is based on

enabling consumers to avoid one of processes, which is most disliked by consumers, i.e. registering or logging in to an e-shop. In 2016 in Poland 34% of consumers chose the option of logging in to other sites by means of a social media account and the majority of such sites were online shops. Currently, social media is the space in which a quite high volume of trade takes place that is indicated by the following data: 38% of social media users declared that they have already used the “buy now” button and 32% of them made a direct purchase through social media.

Summing up the content of social media impact on e-commerce, in 2016 in Poland 24% of social media users were of the opinion that a brand absent in social media is “already lost” and 21% of social media users consider that such a brand is “not trendy”. The younger they are, the more often they agree with this opinion (*Lubię to czy kupuję to?...*, 2016).

Social media are important for enterprises as they are efficient e-recruitment tool (Roe-buck, 2012; Bondarouk, Olivas-Lujan [Eds.], 2013, p. 97-120; Mulder-Williamson, Taylor, 2013; Schlessinger, 2014; Rospigliosi, Greener [Eds.] 2014, p. 57-63; Headworth, 2015; Woźniak, 2016, p. 103-124; Gravili, Fait, 2017). Companies increasingly often decide to use social media in the recruitment process, and social media popularity will also grow in the future. This is due to the fact that social media usage provides companies with the three most important long-term benefits (Gzowska, 2016, p. 79-92). First of all, social media is a significant facilitation for jobseekers because these media provide wider access and geographic scope. Regardless of the location, candidates, who are interested in a specific job offer, can apply for the offered job from any location. Secondly, social media enables recruiters to find hard-to-reach candidates. The reason for this is that the use of social media gives the opportunity to reach passive (non-seeking) candidates who are difficult to reach by other means. Thirdly, due to the application of social media, a competitive advantage can be achieved, i.e. recruiters, using social media in the recruitment process, gain an advantage over recruiters who do not use social media in this process.

However, it should be remembered that the usefulness of social media in employee recruitment depends on the type of business activities. It is worth noting that various social (business) services are not equally effective in every recruitment process. Recruiters point to the fact that the GoldenLine service is effective for seeking less qualified employees with a little professional experience or representing niche professions, as well as those whose qualifications place them at the level of not more than specialist. On LinkedIn, it is easier to conduct international recruitment processes. Here recruiters find highly qualified employees.

3. THE RESEARCH METHODOLOGY

In the initial part of the research, the rankings of voivodships (in regard to social media usage in enterprises) were created by means of methods non-based on the pattern of development (Panek, Zwierzchowski, 2013, p. 57-108). Thus, the conversion of considered variables was conducted. The conversion was carried out by the use of the unitarisation formula:

$$x_{ij} = \frac{x_{ij} - \min_i x_{ij}}{\max_i x_{ij} - \min_i x_{ij}} \quad (1)$$

and by the use of normalisation formula:

$$x_{ij} = \frac{x_{ij}}{\max_i x_{ij}}, \quad (2)$$

in which x_{ij} is observation of i -th object and j -th variable ($i = 1, 2, \dots, n$; $j = 1, 2, \dots, d$).

The aggregated measure (the s_i measure), which bases on the unitarised variables, was computed in following manner:

$$s_i = \frac{1}{d} \sum_{j=1}^d x_{ij} \quad (3)$$

and the h_i measure (based on the normalised data) was computed as follows:

$$h_i = \frac{1}{d} \sum_{j=1}^d x_{ij}. \quad (4)$$

Within the framework of methods based on the pattern of development, Hellwig's method was used (Hellwig, 1968, p. 307-327). The aggregated measure d_i was calculated after data standardisation:

$$x_{ij} = \frac{x_{ij} - \bar{x}_j}{s_j}. \quad (5)$$

The coordinates of the pattern (ideal) object were assumed as maximal values of all variables, because all variables were stimulants. The d_i measure is determined as follows:

$$d_i = 1 - \frac{d_{i0}}{d_0} \quad i = 1, 2, \dots, n, \quad (6)$$

where:

$$d_{i0} = d(x_i, x_0) = \sqrt{\sum_{j=1}^d (x_{ij} - x_{0j})^2}, \quad (7)$$

$$d_0 = \bar{d}_0 + 2s_d. \quad (8)$$

Formula (8) means that d_0 is the sum of arithmetic mean of d_{i0} and $2s_d$ as doubled standard deviation of d_{i0} .

All above analysed aggregated measures are so constructed, that the higher value of the measure (s_i , h_i or d_i), the more advanced development of the explored phenomenon.

In order to conduct cluster analysis, Ward's method was applied (Ward, 1963, p. 236-244). This method was the analysis subject in works of many researchers (Romesburg, 2004; Gan, Ma, Wu, 2007; Walesiak, E. Gatnar [Eds.], 2004, p. 316-350). Ward's method is one of the standard agglomerative hierarchical clustering methods (including the single

linkage method; complete linkage method; group average linkage method – called also as UPGMA – the unweighted pair-group method using the average approach; centroid linkage method – known also as UPGMC – the unweighted pair-group method using the centroid approach; median linkage method – alternative name is WPGMC – the weighted pair-group method using the centroid approach). Within the framework of literature on the clustering method, comparative research, related to the correctness of discovery of given types of data structure, can be remarked. It has been proved that Ward's method (in addition to the flexible method) is the best agglomerative hierarchical method (Arabie, Hubert, Soete [Eds.] 1996, p. 341-375).

The squared Euclidean distance was used in Ward's method. This method has geometric interpretation only with assumption of this type of distance. According to Ward's method, the merging of two clusters is based on the value of sum of squared error (*SSE*). Two clusters are so joined that the increase of total within-cluster *SSE* is minimal, so *SSE* is the criterion of fusion of two clusters. *SSE* is calculated in following manner:

$$SSE = \sum_{i=1}^k SSE(C_i), \quad (9)$$

in which $SSE(C_i)$ is within-cluster *SSE* and it is determined as follows:

$$SSE(C_i) = \sum_{\mathbf{x} \in C_i} (\mathbf{x} - \mu(C_i))(\mathbf{x} - \mu(C_i))^T \quad (10)$$

or

$$SSE(C_i) = \sum_{\mathbf{x} \in C_i} \mathbf{x}\mathbf{x}^T - \frac{1}{|C_i|} \left(\sum_{\mathbf{x} \in C_i} \mathbf{x} \right) \left(\sum_{\mathbf{x} \in C_i} \mathbf{x} \right)^T = \sum_{\mathbf{x} \in C_i} \mathbf{x}\mathbf{x}^T - |C_i| \mu(C_i) \mu(C_i)^T, \quad (11)$$

where:

$$\mu(C_i) = \frac{1}{|C_i|} \sum_{\mathbf{x} \in C_i} \mathbf{x}, \quad (12)$$

$$\mathbf{x} = (x_1, x_2, \dots, x_d)^T, \quad (13)$$

so, $\mu(C_i)$ is the mean of C_i , \mathbf{x} is a vector denoting the object (point) from cluster C_i , and x_j is a scalar denoting j -th attribute of \mathbf{x} . The number of attributes d , is also called the dimensionality of the data set.

Therefore, total *SSE* is sum of individual within-cluster *SSE*. Due to the criterion, which is used in Ward's method, this method is also called as the minimum variance method.

In connection with the presented properties of Ward's method, the main characteristics of this method are juxtaposed in Table 1.

Table 1. The summary of Ward's method

Alternative name	Usually used with:	Distance between cluster are defined as:	Remarks
Minimum sum of square	Distance (requires raw data)	Increase in sum of squares within clusters, after fusion, summed over all variables	Assumes points can be represented in Euclidean space for geometrical interpretation. Tends to find same-size, spherical clusters. Sensitive to outliers.

Source: Own coverage on the basis of (Everitt, Landau, Leese, Stahl, 2011, p. 79).

If one uses the squared Euclidean distance to compute dissimilarity matrix, then the dissimilarity matrix can be analysed by means of the Lance and Williams recurrence formula (Lance, Williams, 1967, p. 373-380; Scheibler, Schneider, 1985, p. 283-304):

$$D(C_k, C_i \cup C_j) = \frac{|C_k| + |C_i|}{\sum_{ijk}} D(C_k, C_i) + \frac{|C_k| + |C_j|}{\sum_{ijk}} D(C_k, C_j) - \frac{|C_k|}{\sum_{ijk}} D(C_i, C_j), \quad (14)$$

where:

$$\sum_{ijk} = |C_k| + |C_i| + |C_j|. \quad (15)$$

If one assumes that cluster C_i and C_j will be merged into C_t cluster and this cluster will be joined with C_k cluster, then the increase in SSE can be noted in following manner:

$$\Delta SSE = \frac{|C_k| + |C_i|}{|C_k| + |C_t|} \Delta SSE_{ki} + \frac{|C_k| + |C_j|}{|C_k| + |C_t|} \Delta SSE_{kj} - \frac{|C_k|}{|C_k| + |C_t|} \Delta SSE_{ij}, \quad (16)$$

where: μ_i, μ_j – the means of clusters C_i, C_j respectively.

From the above it is concluded that an increase in total SSE is caused by an increase in SSE within the following pairs of clusters: C_k and C_i , C_k and C_j . On the other hand, the increase in SSE, that was caused by creating cluster C_t (on the basis clusters i and j) influences reduction of ΔSSE .

4. THE RESEARCH RESULTS

The research was conducted for each year from the period of four years (2014-2017). The clustered elements were voivodships V_i ($i = 1, 2, \dots, 16$). Diagnostic variables X_j , describing the clustered elements, were initially assumed on the basis of GUS data (*Spółeczeństwo informacyjne w Polsce...*, 2014; *Spółeczeństwo informacyjne w Polsce...*, 2015; *Spółeczeństwo informacyjne w Polsce...*, 2016; *Spółeczeństwo informacyjne w Polsce...*, 2017). These pre-selected diagnostic variables (in %) were following:

- X_1 – enterprises using at least one of the below mentioned social media,
- X_2 – enterprises using social networking services,
- X_3 – enterprises having blogs and micro-blogs,

X_4 – enterprises using portals enabling multimedia sharing,

X_5 – enterprises using Wiki tools.

Therefore, the above listed pre-selected diagnostic variables were relative frequencies referring to enterprises using a particular type of social media ($j = 1, 2, \dots, 5$).

In order to exam the discriminative possibilities of the pre-selected variables, the descriptive statistics were computed. The below specified descriptive statistics were computed: arithmetic mean (AM), standard deviation (SD), standard error (SE), coefficient of variation (CV) and coefficient of skewness (CS). The obtained values of the descriptive statistics enables selection of the variables having discriminative possibilities. Effects of computations of three first statistics were visualised in Figure 1.

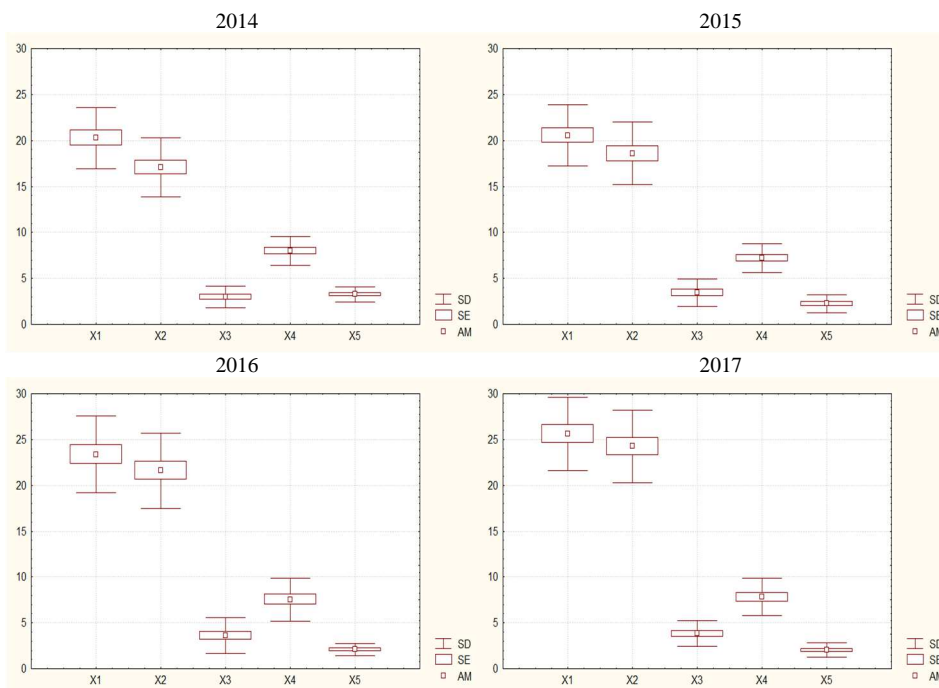


Figure 1. Box-plot on the basis of all variables in each year from the period 2014–2017

Source: Own coverage on the basis of data from GUS.

The majority of the variables, namely variables: X_1 , X_2 , X_3 are characterised by a clear growth tendency in annual AM for the period 2014–2017. In the case of variable X_5 , a decreasing tendency can be noticed in AM in the same period. It was remarked that the higher value of AM of each analysed variable is generally accompanied by higher value of SD in the period 2014–2017. In the majority of the variables (X_1 , X_2 , X_3), the highest value of AM can be observed in 2017, but in case of the three listed variables, the highest value of SD can be clear observed in 2016. Variable X_4 was characterised by the highest SD also in 2016, but the highest value of AM of this variable was in 2014. In case of variable X_5 , the highest value of SD can be observed in 2015, despite the fact that the highest value of average of

this variable was in 2014. This findings (based on the visual analysis) suggest that e.g. *CV* of X_1, X_2, X_3 variables in 2016 should be higher than in the next year. Except for 2014, the analysed variables were characterised by the same order in regard to value of *AM* in the assumed period. The order of the variables in this context was following: X_1, X_2, X_4, X_3, X_5 . In 2014 variable X_5 was before X_3 .

The above consideration was supplemented by computing the all previously listed descriptive statistics (*AM, SD, CV, CS*). The results was juxtaposed in Table 2.

Table 2. Values of the descriptive statistics

Var.	<i>AM</i>	<i>SD</i>	<i>CV</i>	<i>CS</i>	<i>AM</i>	<i>SD</i>	<i>CV</i>	<i>CS</i>
	2014				2015			
X_1	20.2813	3.3373	0.1646	0.8007	20.5500	3.3435	0.1627	0.5937
X_2	17.0875	3.2133	0.1880	1.1316	18.6000	3.4215	0.1840	0.5305
X_3	2.9875	1.1831	0.3960	-0.3555	3.4438	1.4656	0.4256	1.3560
X_4	7.9938	1.5373	0.1923	0.0943	7.1875	1.5671	0.2180	0.7278
X_5	3.2688	0.8268	0.2529	-0.5075	2.2375	0.9722	0.4345	0.9055
	2016				2017			
X_1	23.3813	4.2010	0.1797	1.2595	25.6188	4.0298	0.1573	-0.5770
X_2	21.6063	4.0977	0.1897	1.5271	24.2500	3.9623	0.1634	-0.6657
X_3	3.6063	1.9292	0.5350	2.1145	3.8250	1.4224	0.3719	0.8476
X_4	7.5500	2.3571	0.3122	1.1954	7.8250	2.0260	0.2589	0.2681
X_5	2.0875	0.6752	0.3234	0.9082	2.0375	0.7788	0.3822	1.1733

Source: Own calculation on the basis of data from GUS.

In individual years for the period 2014-2017, values of *CV* (in cases of the all variables) were higher than the assumed threshold 10%. It means that a discriminative possibility of the all variables sufficed and the all variables in all years from the period of mentioned four years should be regarded in the clustering process. When considering the analysis of relative dispersion, it can be remarked that variable X_3 is characterised by the highest level of *CV* in the great majority of analysed years (i.e. three years). On the other hand, variable X_1 is characterised by the lowest value of *CV* in all analysed years. Within the framework of the analysis of *CS*, one notices mostly right-handed asymmetry. In cases of this asymmetry, there are more values lower than *AM* in comparison to values higher than *AM*.

Then the courses of the variables were analysed and compared. In Figure 2, values of the all variables in each year for the period 2014-2017 were presented. ISO 3166-2:PL code (implemented by the International Organization for Standardization), was applied to denote voivodships. Each panel of Figure 2 related to another variable from the set of the analysed variables (X_1, X_2, X_3, X_4, X_5).

The visual analysis leads to the remark that within the framework of variable X_1 , the Masovian Voivodship was placed on the 1st position in each year from the period 2014-2017. Furthermore, within the top three (in terms of variable X_1) the following voivodships were placed most frequently: Lower Silesian (once the 2nd position and twice the 3rd position), Lesser Poland (once the 2nd position and twice the 3rd position). When it comes to the last three positions (14st, 15st, 16st), Holy Cross Voivodship can be first of all distinguished. This voivodship was twice 3rd and twice 2nd. Within the last three voivodships, Wamian-Masurian Voivodship and Subcarpathian Voivodship occurred also occupying them frequently often (each of them thrice).

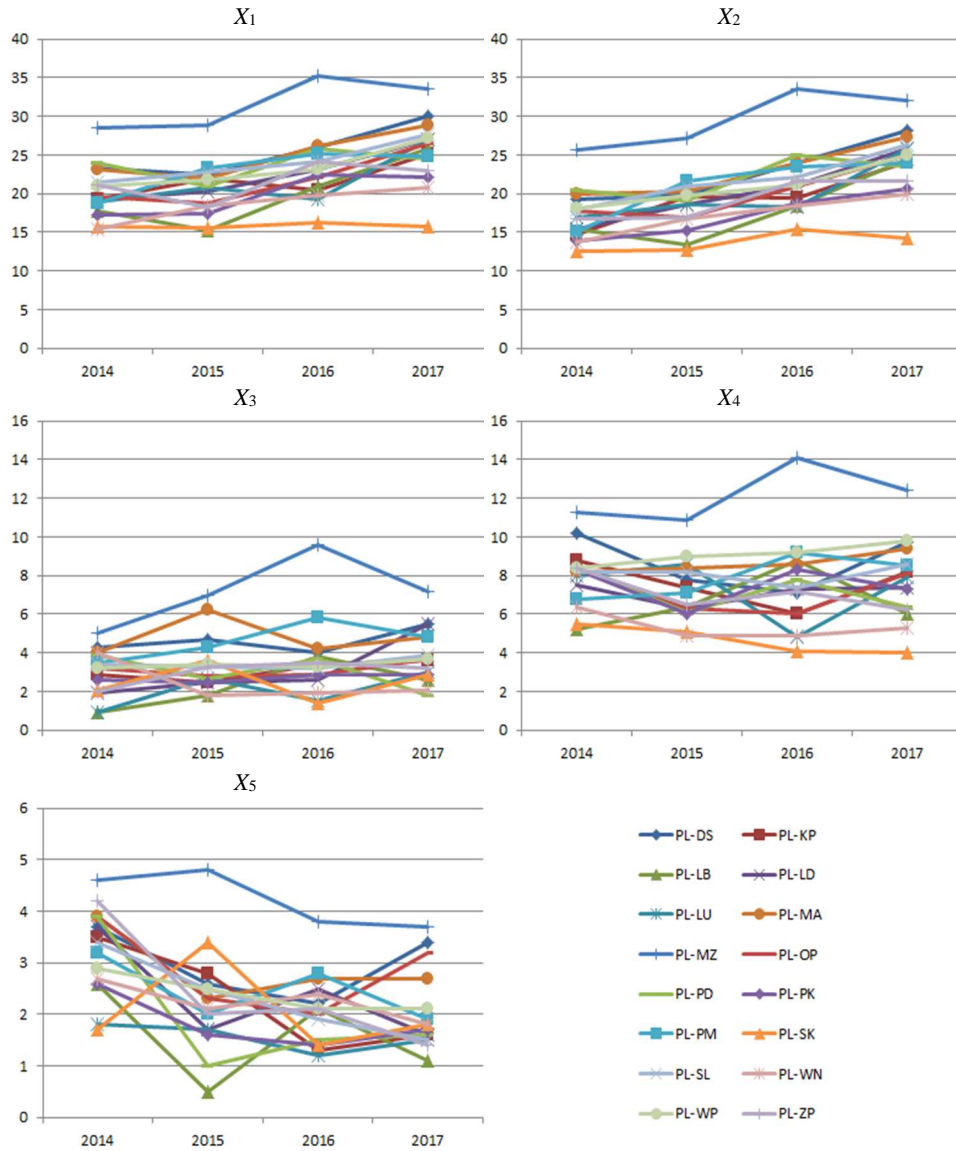


Figure 2. The courses of analysed variables (in %) in the period 2014–2017

Source: Own coverage on the basis of data from GUS.

Much similarity to the above remarks can be noticed within the variable X_2 . Masovian Voivodship was the leader in each year. Lesser Poland Voivodship was thrice in the top three. Lower Silesian Voivodship was twice in locations of this range. Referring to the three last places, the last position was taken by Holy Cross Voivodship in all the analysed years. Besides (within these places), the most frequently occurring voivodships (and their frequency) were the same as in the case of variable X_1 .

In terms of variable X_3 , one can remark that Masovian Voivodship was 1st in each year from analysed period. Within the 2nd and 3rd position, Lower Silesian and Lesser Poland Voivodship are characterised by the most frequency of occurrence. In turn, Wamian-Masurian, Lubusz, and Lublin Voivodship were the most frequently placed among three last voivodships.

With reference to voivodships positions in the field of variable X_4 , Masovian Voivodship was also placed on the 1st position in each year for the period of the analysed four years. Within the two consecutive positions, Greater Poland and Lower Silesian Voivodship were present thrice and twice respectively. It is worth noting that Holy Cross, Wamian-Masurian, and Lubusz Voivodship were usually present in the 14st, 15st and 16st places.

Considering variable X_5 , Masovian Voivodship was placed in the 1st position (in all the cases). Lesser Poland Voivodship was twice in the 3rd position. The same results were observed in the case of Opole Voivodship. In turn, Lubusz, Lublin and Subcarpathian Voivodship were placed the most frequently (each of them thrice) in the three last voivodships.

Summarising the above considered results, Masovian Voivodship was the absolute leader in all considered aspects. It can be also mentioned that Lower Silesian and Lesser Poland Voivodship were especially often seen in the top three in the vast majority of the analysed variables (four variables). If the three last locations are taken into account, then it can be emphasised that Warmian-Masurian, Holy Cross and Subcarpathian Voivodship were placed the most frequently in cases of majority of analysed variables. In this sense, Warmian-Masurian Voivodship was listed in cases of four variables in this range of locations. In the cases of Holy Cross and Subcarpathian Voivodship, it can be noticed that each of them was listed as the most frequent in terms of three variables.

In order to verify the above mentioned remarks, the rankings for particular years were created. The three aggregated measures were used. The selected results of correlation analysis between rankings were presented in Table 3.

Table 3. Values of Kendall's rank correlation coefficient τ

τ							
2014				2015			
Measure	s_i	h_i	d_i	Measure	s_i	h_i	d_i
s_i	1.0000*	0.9500*	0.9500*	s_i	1.0000*	0.9167*	0.9500*
h_i	0.9500*	1.0000*	0.9333*	h_i	0.9167*	1.0000*	0.8667*
d_i	0.9500*	0.9333*	1.0000*	d_i	0.9500*	0.8667*	1.0000*
2016				2017			
s_i	1.0000*	0.9667*	0.9667*	s_i	1.0000*	0.9500*	0.9667*
h_i	0.9667*	1.0000*	0.9333*	h_i	0.9500*	1.0000*	0.9833*
d_i	0.9667*	0.9333*	1.0000*	d_i	0.9667*	0.9833*	1.0000*

Note: * denotes statistical significance at 1% level

Source: Own calculation on the basis of data from GUS.

Due to the fact that several rankings were prepared (based on the different aggregated measures), their conformity was examined. This approach makes it possible to assess reliability of obtained results and conclusions. Therefore, values of Spearman's rank correlation coefficient ρ and Kendall's rank correlation coefficient τ were calculated. The calculations referred to correlation in particular pairs of various measures (i.e. between: s_i and h_i , s_i and d_i , h_i and d_i) within the framework of individual year in the explored period. All

obtained values of both coefficients indicate that correlation in the all compared pairs of rankings is statistically significant ($p < 0.01$). Presentation of the results (in Table 3) was limited to the values of Kendals's rank correlation coefficient τ .

The rankings under the h_i measure were presented as an exemplary in Figure 3.

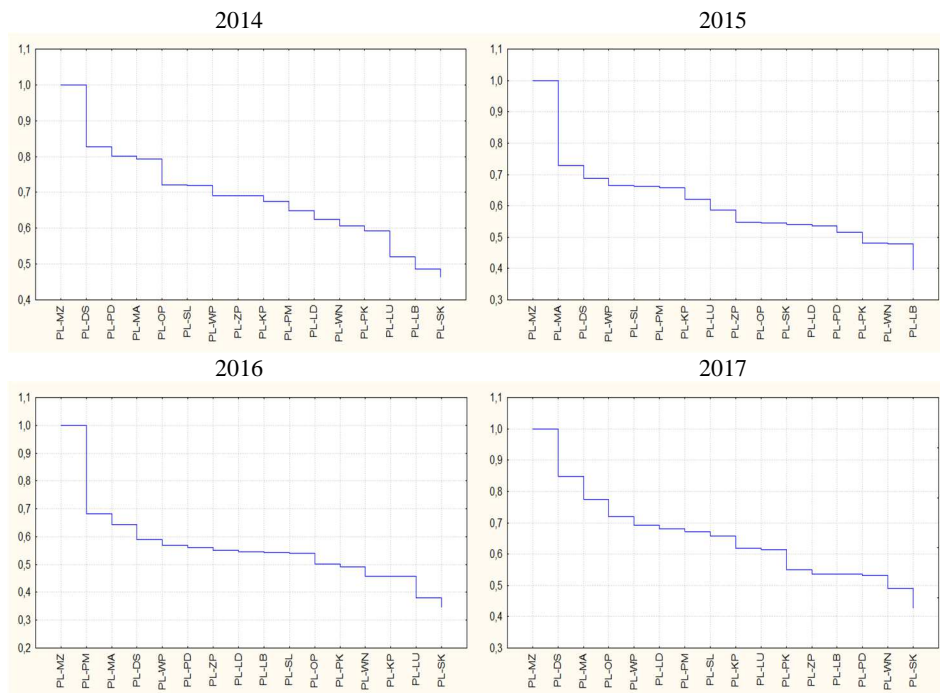


Figure 3. Rankings of voivodships under the h_i measure

Source: Own coverage on the basis of data from GUS.

When it comes to the top three, it was noticed that the results (obtained by the use of all types of applied measures) were the same within the framework of particular year. Masovian Voivodship was placed in the 1st position in all analysed years. The following two positions were the most frequently occupied by Lower Silesian and Lesser Poland Voivodship. In 2014 and 2017 Lower Silesian Voivodship was in the 2nd place and in 2015 this voivodship was 3rd. Lesser Poland Voivodship was once located in the 2nd position and then twice in the 3rd place. It was observed in 2015, 2016 and 2017 respectively. So, the result related to the top three was coincident with the result of visual analysis of particular variables in the period of four years. The analysis of the three last positions leads to the statement that the lowest level of explored phenomenon was observed in Holy Cross Voivodship (thrice in the last position under the all measures). In 2015 Lubusz Voivodship was located in the last position. This voivodship was also in the 15th position in 2014. In case of this voivodship, the results was confirmed by the all measures. Warmian Masurian Voivodship was also located in the range of three last places twice. It means, in the 15th position

in 2015 (under the measure s_i and h_i) and in the 15th position in 2017 (under the three measures). The 14th position (in 2014 under the measure s_i and h_i) and the 15th position (in 2016 under the three measures) were taken by Lublin Voivodship. The result was very similar to the remarks from visual analysis. The frequency of occurrence in the first three places according to the carried out visual analysis (i.e. the analysis of the course of individual variables in time) does not necessarily coincide directly with places in the ranking because in the linear ordering of objects, the distances between objects are the most important.

The effects of clustering the voivodships by means of Ward's method and the square of the Euclidean distance for four examined years are presented in Figure 4. On the other hand, the spatial visualisation of the clusters of voivodships was also presented in the next figure (Figure 5).

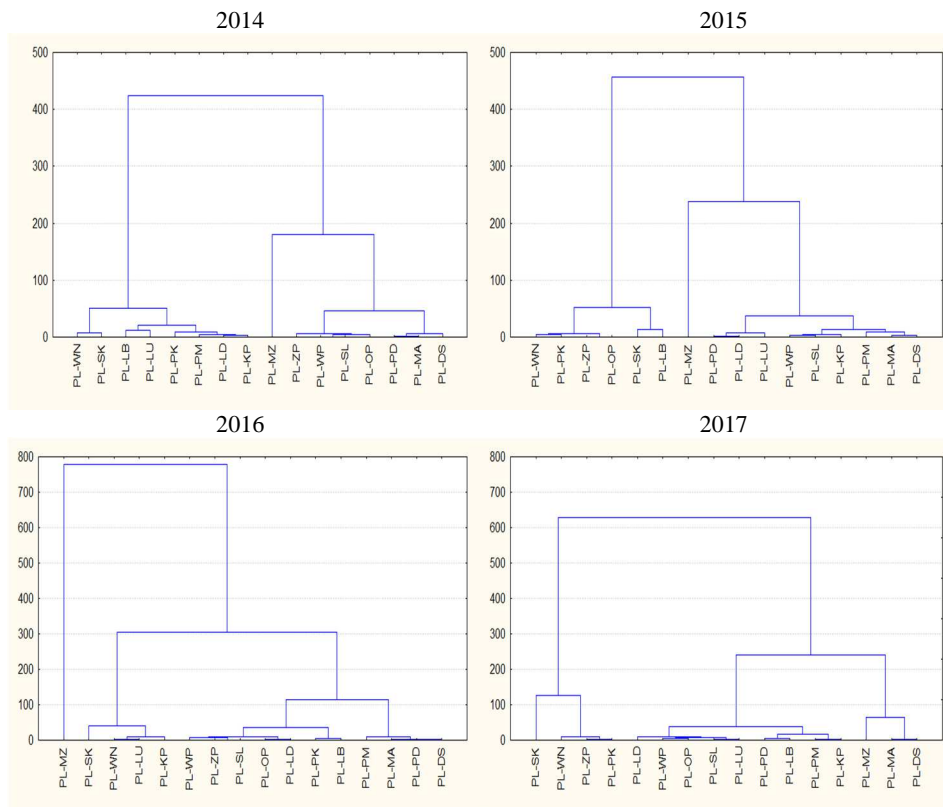


Figure 4. Clustering of voivodships by means of Ward's method

Source: Own calculations on the basis of data from GUS.

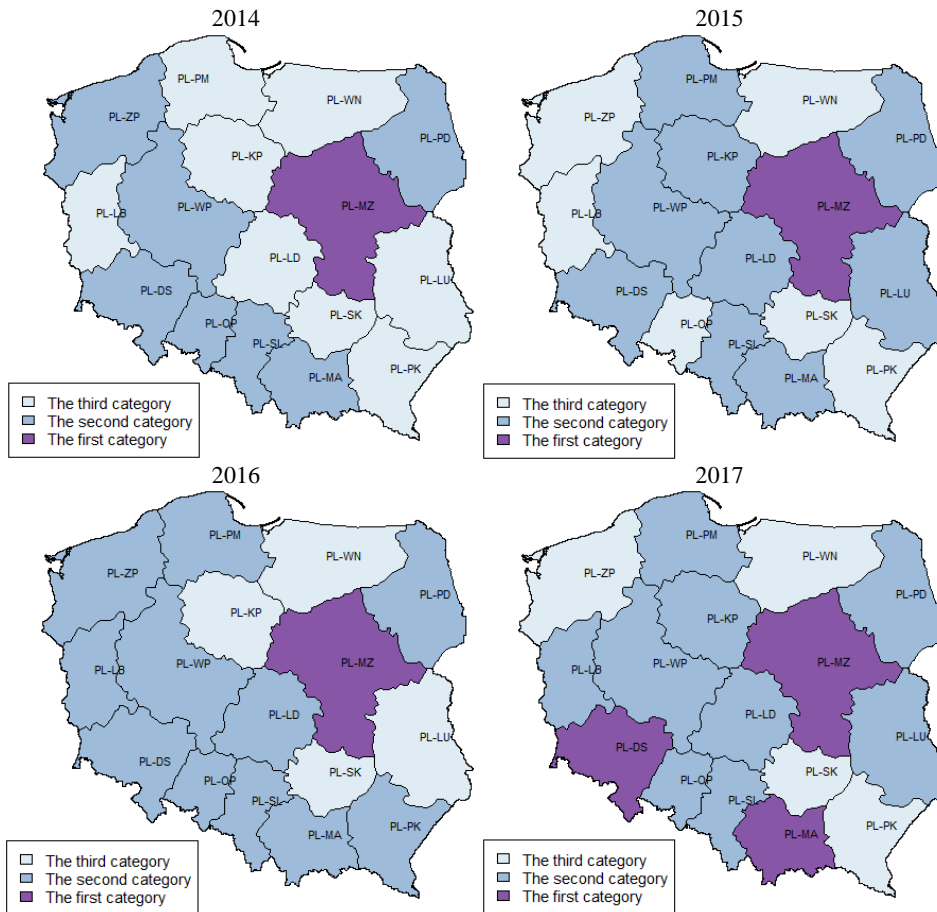


Figure 5. Spatial visualization of the voivodships clusters fixed by the use of Ward's method

Source: Own coverage (on the basis of dendrograms analysis) in R programme.

The analysis of the dendrogram for 2014 leads to the conclusion that three categories of voivodships can be differentiated. The first (the best) category comprises only one voivodship, i.e. Masovian Voivodship. The second category consists of the seven following voivodships: West Pomeranian, Greater Poland, Silesian, Opole, Podlachian, Lesser Poland, and Lower Silesian. The third (the least developed) category contains: Holy Cross, Warmian-Masurian, Lubusz, Lublin, Subcarpathian, Pomeranian, Lodz, and Kuyavian-Pomeranian Voivodship. Therefore, this cluster involved eight objects. In comparison to the previous year, in 2015 the third category was reduced to six voivodships. Namely, Lublin, Pomeranian, Kuyavian-Pomeranian and Lodz Voivodship went to the second cluster, but West Pomeranian and Opole tumbled to the third category. So, the number of objects in the second category increased to nine. In 2016 West Pomeranian and Opole Voivodship returned to the second category. It caused the third category to consist of only four

voivodships, whereas the second cluster involved eleven voivodships. Important changes were found in 2017. The first category was extended by Lesser Poland and Lower Silesian Voivodships, which went from the second category. After changes in terms of second and third category, the second category included nine objects and the third category was comprised of four objects.

To summarise, the number of objects in the first category and second category increased in the period 2014–2017. In the first case, the number increased from one to three, and in the second category – from seven to nine (in 2016 the number even equalled 11). If the changes of number of third category are reflected, then one can describe them as decreasing. The number of objects in this category decreased from nine to four. In connection with this, the detected changes in analysed structure of voivodships can be assessed as positive.

The maps are so created that the better the category of a voivodship, the darker is its colour (Figure 5). Therefore, the figure enables assessment of spatial dispersion. Especially important is the identification of a differentiation between the east and the west of Poland. The maps do not point out a clear dispersion between eastern and western voivodships in terms of analysed categories. The greatest differentiation in the analysed period was in 2014. The majority of western voivodships were in the second category, whereas the majority of eastern voivodships were in the third category. In the subsequent years, this structure of voivodships was blurred. In this context, the detected clusters and their changes in the analysed period can therefore be said to be beneficial. What is more, it was perceived that the clusters, which were distinguished in terms of overall ICT usage by enterprises (Kaczmarczyk, 2017, p. 83-96), coincided with the clusters presented in Figure 5. In order to compare the results, the effect of clustering voivodships from quoted work was set in Figure 6.

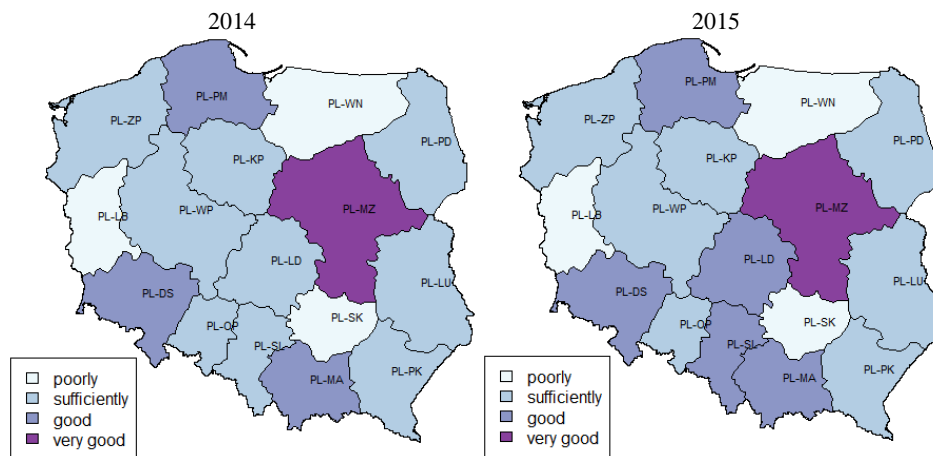


Figure 6. Clustering of voivodships under the *k*-means method

Source: (Kaczmarczyk, 2017, p. 93).

In the stated work, seventeen variables, associated with ICT usage in enterprises, were used to detect clusters of voivodships. Therefore, the following variables (being relative frequencies) were inter alia used in the clustering of voivodships: enterprises using computers, enterprises with access to the Internet, enterprises with broadband access to the Internet, employees using computers in enterprises, employees using computers with access to the Internet, enterprises placing orders by means of computer networks, enterprises receiving orders by means of computer networks, enterprises running big data analyses. In quoted research, four clusters (very good, good, sufficiently, and poor) were discovered for the years 2014 and 2015 separately. There are evident analogies in the compared works. The cluster, which is characterised by the highest level of ICT usage (the cluster termed as very good), contained one voivodship, namely Masovian Voivodship. Holy Cross, Warmian-Masurian, and Lubusz Voivodship were classified into the lowest cluster (identified as poor), so it is coincident with the findings assembled in Figure 5. Therefore, statement can be formulated that a voivodship belonging to a cluster characterised by a particular level of social media usage in enterprises depends on its belonging to a cluster referring to overall ICT usage in enterprises.

Enterprises (in %) using any social media in the EU states are shown in Figure 7.

It is worth emphasising that in Poland the level of social media usage was the lowest in the whole of the European Union in 2015-2017. The percentage of enterprises using any social media was assumed as the indicator in the below described analysis. The data was extracted from Eurostat database. Then, the data was ordered by the decreasing value of the indicator.

Therefore, Poland has occupied the last position in the period 2014-2017 and the results for Poland increased from 22% in 2014 to 27% in 2017. Meanwhile, the values of the indicator for the European Union (28) were 36%, 39%, 45%, 47% for 2014, 2015, 2016, and 2017 respectively.

Therefore, in 2014 the result for Poland was 14 percentage points lower than the average for the European Union (28). Then (in 2015) Poland was 17 percentage points lower than the European Union (28). In 2016 and 2017 the distance amounted 20 percentage points. It can be detected that the distance between Poland and the European Union has stabilised in the last analysed year. It means in 2017 the distance did not increase. In 2017 the difference between Poland and the European Union was at the unchanged level.

Despite stopping the distance increase, this analysis indicates a serious challenge for the Polish policy of digitalisation within the framework of the considered issue. Moreover, the results of Malta (the leader in the all analysed years) increased from 66 to 74 per cent for individual years from the period 2014-2017. So, taking into account the results of Malta, the indicator for Poland was 44, 50, 46, and 47 percentage points lower in 2014, 2015, 2016, and 2017 respectively. In comparison to the percentage of enterprises using any social media in Malta, results of Poland are very low. The percentage of enterprises using social media (percentage of enterprises regardless of kind of social media – social networking services, blogs and micro-blogs, portals enabling multimedia sharing, Wiki tools) in Masovian Voivodship were 28.5%, 28.9%, 35.3%, and 33.5% in 2014, 2015, 2016, and 2017 respectively. Therefore, the results of even the leading-edge voivodship in this context, namely Masovian Voivodship, are clearly lower than in case of average for the European Union (28).

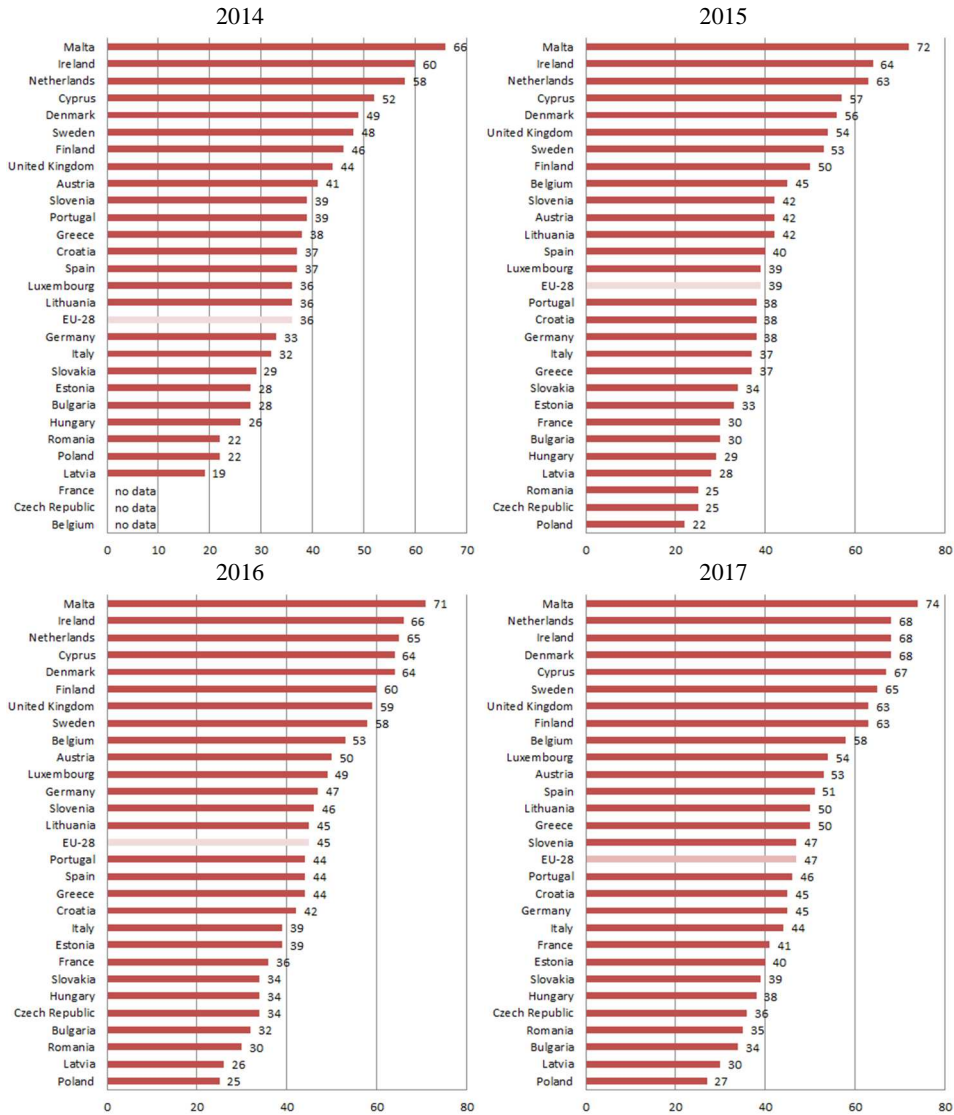


Figure 7. Enterprises using any social media in the EU states (in %)

Source: Own coverage on the basis of Eurostat database.

5. CONCLUSIONS AND RECOMMENDATIONS

With regard to social media usage by enterprises, only Masovian Voivodship existed in the first (the best category) from 2014 to 2016. So, the first category consisted originally of one object but in 2017 the number of voivodships in this category was extended to three. It was caused by inclusion of two additional following voivodships: Lower Silesian and Lesser Poland. In the analysed period of four years, the second category was also extended

from seven to nine objects. On the other hand, the third category was reduced from nine to four voivodships. Warmian-Masurian and Holy Cross Voivodship were located in the third category in consecutive years (without exception) for the period 2014-2017. The above mentioned voivodships (in the first and third cluster) were also located very similarly in the vast majority of analysed variables in individual years for the period 2014-2017. In conclusion, the changes of the structure of voivodships in the analysed field are beneficial. However, from the above is concluded a recommendation for regional policy connected with digitalisation and building a knowledge-based economy. So, the voivodships belonging especially to the third category should escalate social media usage in enterprises, which is obviously connected with overall ICT usage by enterprises in these voivodships. It is especially important from the point of view of the results of the EU states in terms of social media usage in enterprises, because Poland was located in the last position (taking into account the percentage of enterprises using any social media).

In turn, the analysis of spatial dispersion leads also to the positive conclusion. The maps do not indicate a clear dispersion between eastern and western voivodships in terms of analysed categories. It can be perceived that the dispersion between eastern and western regions decreased in the analysed period. The majority of western voivodships was in the second category in individual years for the period of 2014-2017, but some eastern voivodships were also classified into the second category. Podlachian Voivodship was in the all analysed years in the second category and Lublin Voivodship was in the second category in 2015 and 2017. Notwithstanding, the eastern voivodships with the lowest social media usage in enterprises should concentrate on intensification of the explored phenomenon.

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PROINNOVATIVE REGIONAL DEVELOPMENT IN POLAND IN THE SECOND DECADE OF THE 21ST CENTURY IN A STATISTICAL CONTEXT

As the aim of regional research is usually a description and an assessment of sets of object, the main two research tasks, presented in many research papers, are assumed to consist of grouping and linear ordering. This paper is part of author's series of publications devoted to the findings of the proposed original concept that allows for joint consideration of regional innovation and regional development. *Proinnovative regional development* is a term introduced for a certain overriding criterion enabling the author to consider the discussed multidimensional economic categories together in the mutual relationship and not, like so far, separately. The aim of the article is to present the quantification of this research area and its statistical analysis using the methods of linear ordering at the regional level in Poland.

Keywords: innovation, development, region, statistical analysis.

1. INTRODUCTION

Regional development can be perceived as the complex economic category describing – considered usually at the basic regional level – the process of constant socio-economic changes of particular areas, involving individual regions and leading to the improvement of the current situation taking the adopted criteria into consideration (Kudłacz, 1999; Markowska, 2002; Korenik, 2004;). Regional innovation can be perceived as an ability and willingness of the entities, operating in and for the given region not only in the social and economic sphere but also in the field of regional policy, to create and absorb innovation as well as to a constant search for and practical implementation of the results of research studies, research and development works, new ideas, suggestions, inventions and solutions with the aim to make positive changes of the quantitative growth and qualitative development in the region, to respond better to the needs of inhabitants as well as to use the available resources more effectively (Strahl, 2010; Brol, 2011; Świadek, 2011). Both economic categories under consideration hold an important place in the economic theory and play a significant role in the contemporary economies (Korenik, 2004; Strahl, 2006; Hollanders, Esser, 2007; Brol, 2011; Markowska, 2012). The evolution of theoretical views, the change of paradigms and the observed processes and phenomena taking place in the world result in the fact that

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the currently fundamental development is becoming to be based on knowledge and innovation (Marciniak, 2010; Janasz, 2011; Weresa, 2012;). It was, therefore, assumed that regional development is a broader term and innovation (more specifically: regional innovation) is becoming one of the main factor that defines it. A higher innovation level has a pro-development influence on the region, it has also a beneficial effect on the obtained economic results and improves the general socio-economic situation of a given region. On the other hand, however, one should be aware that pro-innovative activities in the region are to some extent determined by the level of development already achieved in that area. Underdeveloped regions of a low level of wealth usually have less funds on research and implementation of innovation, which makes their possibilities more limited and in consequence frequently leads to the lower economic growth rate.

Regional development, as well as regional innovation, from the statistical point of view, are treated as multidimensional characteristics, and due to their complexity, they are usually considered separately. Nevertheless, the correlation between these makes it possible to analyze them jointly as well. The proposed approach has been referred to as *proinnovative regional development* (Klóska, 2015).

2. QUANTIFICATION OF THE RESEARCH AREA

In literature of the subject different indicators of changes in regions are considered (Strahl, 2005; Pięta-Kanurska, 2005; Sobczak, 2006; Prusek, Kudełko, 2009; Pawłas, 2010). Multidimensional character and various conditions of regional development make it impossible to define it in a universal and unambiguous way and this results in huge difficulties with the research area quantification. Theoreticians have long been looking for determinants of development, that is such factors, which have a most significant effect and analysts select (most often on the basis of substantive prerequisites) and ultimately choose (relying sometimes on particular formal procedures) diagnostic variables, which in a possibly comprehensive way – with limitations noticed nowadays resulting mainly from limited accessibility and frequently also from the lack of reliable and comparable statistical data – would describe regional development and innovation. When it comes to a more extensive scientific discussion on the quantification of the research area of both economic categories under consideration works of such authors as D. Strahl (Strahl, 2006), J. Korol (Korol, 2008), M. Obrębalski (Obrębalski, 2002), T. Borys (Borys, 2005), R. Klóska (Klóska, 2018), B. Godin (Godin, 2004), L. Marins (Marins, 2008) czy H. Hollanders, A. van Cruysen (Hollanders, van Cruysen, 2008) are recommendable.

The list of twenty six indicators presented in tab. 1, being a summary of variables taken into account in research on innovativeness of regions and regional development in Poland (Klóska, 2015) is homogeneous with regard to its substantive value, and it reflects, as much as possible, the key aspects of the superior criterion, which in the proposed research approach combines both economic categories. Individual characteristics are carriers of various pieces information on the phenomenon being analyzed, and their overall evaluation does not give rise to any objections. This fact is justified, as – while the issues being discussed are complex – both regional innovativeness and regional development are to lead to positive changes in terms of quantitative increase and qualitative progress in specific areas. Their components, which are often difficult to grasp and sometimes substitutive, are complementary in leading to achievement of the same objective: aiming for changes for better. Assuming that regional development is a term broader than innovativeness of region, it seems

that the structure of the set of statistical features (containing more pro developmental than proinnovative indicators), used in table 1 to describe proinnovative regional development as the concept of combined analysis of these economic categories, seems reasonable.

Table 1. Proinnovative regional development indicators in Poland

Indicator symbol	Name of indicator
I ₁	R&D expenditures in relation to GDP (%)
I ₂	Percentage of persons aged 15 and older having university education (%)
I ₃	R&D expenditures of the enterprises sector in relation to GDP (%)
I ₄	Percentage of industrial SMEs cooperating in cluster initiatives or engaged in other formalized forms of cooperation (%)
I ₅	Share of innovative enterprises in the total number of industrial enterprises (%)
I ₆	Share of innovative enterprises in the total number of enterprises of the services sector (%)
I ₇	Share of R&D employees in total employed population (%)
I ₈	Share of net revenues from sales of products in entities classified as representing in high and medium-high-tech sectors (enterprises hiring more than 9 employees) (%)
Indicator symbol	Name of indicator
R ₁	Infant mortality per 1000 live births
R ₂	Risk-of-relative-poverty rate (%)
R ₃	Number of university students per 10 thousand inhabitants
R ₄	Registered unemployment rate (%)
R ₅	Number of road fatalities per 100 thousand inhabitants
R ₆	Water consumption by national economy and total population (hm ³) per 10 thousand inhabitants
R ₇	GDP (current prices) per capita in PLN
R ₈	Share of expenditures of business entities for R&D activity in total (%)
R ₉	Number of newly registered national economy entities in private sector in ten thousands inhabitants
R ₁₀	Employed per 1000 inhabitants
R ₁₁	Total investment expenditures (current prices) per capita in PLN
R ₁₂	Percentage of population with access to sewage treatment plant (%)
R ₁₃	Afforestation (%)
R ₁₄	Recycling of packaging waste (%)
R ₁₅	Share of devastated and degraded land requiring recultivation in total area (%)
R ₁₆	Share of waste (excluding municipal waste) subject to recovery in the quantity of waste generated during the year (%)
R ₁₇	Share of production of electricity from renewable forces in total production of electricity (%)
R ₁₈	Electricity consumption per 1 million PLN of GDP (GWh)

Source: own compilation on the basis of: (Klóska, 2015).

3. METHODOLOGICAL REMARKS

This (methodological) chapter presents the issues of undertaken research determined by the title of the article. As a preliminary point it is worth to underline huge possibilities of applying the methods of multivariate statistical analysis in regional research. A considerable

scientific achievements of Polish statisticians and econometricians in this scope should be highlighted due to their significant contribution to the global development of grouping and linear ordering methods. Z. Hellwig (Hellwig, 1968) spotlighted the need of using measures that would give a synthetic and at the same time precise enough information about the character of observed changes of social-economic phenomena and it initiated many methodical proposals in this area. Interesting notes and proposals were presented by among others: M. Cieślak (Cieślak, 1974), S. Bartosiewicz (Bartosiewicz, 1976), T. Borys (Borys, 1978), W. Pluta (Pluta, 1977), M. Wypych (Wypych, 1982), E. Nowak (Nowak, 1977), T. Grabiński, A. Malina, A. Zeliaś (Grabiński, Malina, Zeliaś, 1990), S. Wydmus (Wydmus, 1984), D. Strahl (Strahl, 1987) or M. Walesiak (Walesiak, 2002). From the latest theoretical-research items published in Poland of the main priority for regional studies works of among others: A. Młodak (Młodak, 2006), J. Korol (Korol, 2007) or M. Markowska (Markowska, 2012) should be taken into consideration. Same important and interesting are the scientific achievements presented in the world literature. In this point it is worth to mention works of such authors as among others: J.A. Hartigan (Hartigan, 1975), A.A. Afifi, V. Clark (Afifi, Clark, 1999), I. Borg, P.J.F. Groenen (Borg, Groenen, 1997), M.E. Johnson (Johnson, 1987), H.H. Bock (Bock, 2002), B. Mirkin (Mirkin, 2005), B.S. Everitt, S. Landau, M. Leese, D. Stahl (Everitt, Landau, Leese, Stahl, 2011) or B.F. Manly (Manly, 1986).

For the set of indicators used in table 1, statistical material was gathered, which allowed for a more or less complex description of proinnovative regional development in Poland. The necessary data comes from statistical reports, and all analyses were conducted on the basis of a descriptive (deterministic) and not a stochastic approach. The variables discussed are not random, and the problem of a random sample being representative of the population is not present here. All objects (sixteen provinces in Poland), constituting the entire population, are considered in the observation, and the empirical data obtained is constant. Therefore, there is no need to examine the potential stochastic characteristics of the list of observations. After gathering numerical data, diagnostic characteristics were determined, expressed using the ratio scale of measurement, and, as this type of a strong scale makes it possible to use all arithmetic operations, it does not limit the possibilities of applying specific statistical method. At the same time, the assumption of a homogeneous scale of measurement of the variables analyzed, usually required for multidimensional statistical analysis methods, has been met². With regard to the formal aspects, it should be added that the characteristics applied are quantitative (and not qualitative) and continuous (and not discrete), and thus their observed increment (increase or decrease) can constitute even the smallest part of the unit, and the set of possible values is not quantifiable (Walesiak, 1993). As it can be concluded on the basis of the above analysis, values of variables have been presented using positive real numbers, which can be ordered clearly along the number line, assuming a certain specific, but freely chosen unit, where zero represents a complete lack of value of the feature being measured. High values (cf. table 1) of most of the assumed variables (boosters) are desirable, while only seven of these are dampers, marked in table 1 as: R₁, R₂, R₄, R₅, R₆, R₁₅ and R₁₈. It is also worth noting here that it requires a well thought-

² www.stat.gov.pl (access: 03.12.2018). Rare shortages of data were complemented by using some methods of interpolation and extrapolation or – as it is sometimes being done (cf.: *European Innovation Scoreboard 2018 – Methodology Report*, European Union, Belgium 2018) – data from the last available year were acknowledged.

out decision only to determine the system of weights of the characteristics examined. Nevertheless, up to date, this issue has not been decisively resolved, and there is no universal, generally applicable procedure; as a result, it was decided – as it is in practice by most researchers (Grabiński, 1984) – to assign the same value to every variable, applying equal weights.

In this study, the research task undertaken is linear ordering, included in the scope of multidimensional statistical analysis. It can be brought down to determination of the order of objects analyzed according to a specific criterion, represented by the assumed set of diagnostic features, which makes it possible to specify their hierarchy. In order to value the objects being compared, we establish an appropriate synthetic development measure, taking into account the fact that various aggregation formulas may generate different end results, even with reference to the general criterion, represented by the same list of diagnostic variables (Czyżycki, 2012). In the approach described, the synthetic measure of development has been calculated separately for each year in the examined period of 2011-2017, which allowed for determination of hierarchy of objects (provinces of Poland) from the perspective of proinnovative regional development (taking into account twenty six variables presented in table 1). A well-known aggregation formula was applied, methodically consistent with the Summary Innovation Index, used widely in the EU nomenclature (European Innovation Scoreboard, 2018), that is, the arithmetic average of diagnostic variables brought down to comparability through zeroed unitarisation, multiplied by one hundred (Klóska, 2018):

This can be expressed by the formula:

$$W_i = \frac{100}{k} \sum_{j=1}^k \alpha_j z_{ij} \quad (1)$$

where: W_i – synthetic development measure,
 k – the number of variables taken into consideration,
 α_j – prominence of j variable,
 z_{ij} – x_{ij} of the statistic variables taken into consideration in the study normalised by the zeroed unitarisation method, whereas the algorithm of boosters is as following:

$$z_{ij} = \frac{x_{ij} - \min\{x_{ij}\}}{\max\{x_{ij}\} - \min\{x_{ij}\}} \quad (2)$$

and for dampers:

$$z_{ij} = \frac{\max\{x_{ij}\} - x_{ij}}{\max\{x_{ij}\} - \min\{x_{ij}\}} \quad (3)$$

The values of this measure may range from zero to one hundred, and the higher their value, the higher their place in the ranking. In the discussion of the approach taken, the author analyzed changes in proinnovative development in Poland in years 2011-2017.

4. STATISTICAL DESCRIPTION OF THE DATA

The structure of provinces in Poland in terms of innovativeness (I_1 - I_8 in tab. 1) is differentiated most in terms of percentage share of expenditures (including the sector of enterprises) for R&D activity in relation to GDP, and these values throughout the examined period, despite a slight improvement, have been maintained on a relatively low level. Definitely unfavorable are the low values of the shares of innovative enterprises in the total number of enterprises in the services sector, as well as in industry (although there is a slight improvement noticeable in this regard as well). On the basis of the assumed research criterion, it can be assessed as positive that there is a visible trend of growth in the percentage of persons aged 15 and more with university education. Education, as well as awareness of the need for lifelong learning, is a significant proinnovative factor. However, it should be underlined that a number of measures presented in table 2 show little change over time, which, from the perspective of the variables being examined, does not exert positive impact on improvement of innovativeness of regions.

The same approach was applied to determination of the statistical model of regional development in Poland (R_1 - R_{18} in tab. 1). Analysis of the indicators R_1 - R_{18} in tab. 1 can be conducted in three spheres: social (the first six indicators), economic (the following five indicators) and environmental (the last seven indicators). In the first dimension, the provinces of Poland are most diversified in terms of water consumption for the purposes of national economy and the total population per 10 thousand inhabitants. In provinces recording the highest consumption (Świętokrzyskie and Zachodniopomorskie) this indicator ranged between 8-11 hm^3 , while in the region of the lowest consumption (Podlaskie), it did not exceed 0.74 hm^3 . There is a positive trend when it comes to the number of road fatalities per 100 thousand inhabitants and infant mortality, as well as a visible improvement in the recent years in terms of unemployment. On the other hand, there is a negative trend of constant decrease in the number of university students per 10 thousand inhabitants. From the economic perspective, with regard to the indicators applied, the Polish regions are most differentiated in terms of percentage share of expenditures of business entities for R&D activity in total. Visibly higher values of most of the measures applied in year 2017 in comparison with year 2011 should be assessed positively from the perspective of development. As for the environmental aspect, the most significant differentiation of the Polish provinces is visible when it comes to recycling of packaging waste and the share of electricity production from renewable sources to total production of electricity. A number of variables presented have changed very little over time; at the same time, there is a visibly positive, pro-developmental trend of increase in the percentage of the population with access to sewage treatment plants.

5. RANKING OF PROVINCES IN TERMS OF PROINNOVATIVE REGIONAL DEVELOPMENT IN POLAND

In the research part of the article, the author presented the results of a linear ordering of the Polish regions addressed on the basis of the adopted diagnostic variables. The original values of the synthetic measure of development applied made it possible to put the provinces of Poland in order with regard to proinnovative regional development in years 2011-2017, and their places in the ranking have been presented in tab. 2.

Table 2 Ranking of provinces in terms of proinnovative regional development in Poland in years 2011-2017

Province	Ranking place in year						
	2011	2012	2013	2014	2015	2016	2017
Dolnośląskie	4	4	4	5	4	4	5
Kujawsko-Pomorskie	12	14	14	14	11	14	14
Lubelskie	9	13	12	7	12	11	11
Lubuskie	10	8	11	10	10	13	10
Łódzkie	14	12	9	13	14	10	13
Małopolskie	3	2	2	3	2	2	3
Mazowieckie	1	1	1	1	1	1	1
Opolskie	8	11	10	11	13	12	9
Podkarpackie	5	5	3	4	5	5	4
Podlaskie	11	9	8	8	7	7	12
Pomorskie	2	3	5	2	3	3	2
Śląskie	6	6	6	6	6	6	6
Świętokrzyskie	16	16	16	16	16	16	16
Warmińsko-Mazurskie	15	15	15	15	15	15	15
Wielkopolskie	7	7	7	9	8	8	7
Zachodniopomorskie	13	10	13	12	9	9	8

Source: own compilation on the basis of data of the Central Statistical Office.

On the basis of information provided in tab. 2, it can be noticed that in the examined period, the leader of proinnovative regional development in Poland every year has been Mazowieckie Province. As for the remaining places among the top three provinces, there has been some rotation, although most often the second and third places were occupied by Małopolskie and Pomorskie provinces. Podkarpackie, Dolnośląskie and Śląskie provinces also tend to occupy high places. The lowest score among all provinces of Poland has been assigned each time to Świętokrzyskie Province (with Warmińsko-Mazurskie Province being only slightly better). Variability of the ranking position (that is, the range measured as the difference between the first and the last place) is different for each region, ranging from zero (for Mazowieckie, Śląskie, Świętokrzyskie and Warmińsko-Mazurskie) to six positions (for Lubelskie), and the total of all ranges is 43. It should also be noted that low range is usually applicable to regions occupying the top and bottom positions in the rankings under concern, which indicates deepening or at least strengthening of the disproportion between the strongest and the weakest provinces in Poland in terms of proinnovative regional development in the second decade of the 21st century.

6. CONCLUSIONS

In conclusion, it should be noted that the subject matter discussed does not constitute a finished stage of the research. The observations and results of the study provide greater insight into the title economic categories and allow to identify their changes within the recent years in Poland. While some problems have been solved, some other ones have only

been indicated and may undoubtedly constitute an introduction to scientific discussions. The multi-faceted nature of these issues makes it difficult to expect clear-cut solutions and, therefore, the research studies in this scope should be continued. Further studies on the proposed combined approach to regional innovation and regional development in the form of *proinnovative regional development* seem particularly important.

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COMBATING TERRORISM IN THE SLOVAK REPUBLIC²

In terms of terrorism, security environment in the Slovak Republic has been stable and peaceful to this date, without any imminent risk or threat. The Slovak Republic is not a primary target of any terrorist threat currently. However, on account of its active participation in international organizations, counter-terrorist activities and operations, a threat of a terrorist attack taking place in Slovakia is increasing. The National Action Plan for the Fight against Terrorism for 2015-2018 took on some of the tasks that had been continuously fulfilled in the previous period and, through new tasks, extends the possibilities and instruments for the fight against terrorism in the Slovak Republic. The primary objective is to ensure protection of the life, health and property of the population and public authorities in the Slovak Republic from terrorist attacks. In the counter-terrorist measures, the main focus is placed especially on the preparedness and rapid response to a possible terrorist attack or other similar activity.

Keywords: radicalism, risk, terrorism, terrorist attack, crime.

1. INTRODUCTION

In recent years, several EU Member States have faced violent terrorist attacks organized by various terrorist cells as well as “lone wolves” acting individually, inspired by terrorist propaganda or extremist narrative. According to the EU Terrorism Situation and Trend Report from 2017 (Te-Sat) in 2016 a total of 142 failed, foiled or completed attacks were reported by 8 EU Member States. As a result of the completed attacks, 379 people were injured and 142 victims died, mostly in the hands of the jihadists (European Parliament resolution of 11 February 2015 on anti-terrorism measures (2015/2530(RSP))). The degree of a terrorist threat was not the same in each EU Member State, however each state might be exposed to threats resulting from an unintentional transit point or a safe haven for terrorists.

In terms of terrorism, security environment in the Slovak Republic has been stabilized and peaceful, without any imminent risks or threats. Authorities have not recorded any direct activity of terrorist groups on the territory of Slovakia so far and any interests of the

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Slovak Republic abroad have not been primary targets of terrorist attacks (National Action Plan for the Fight against Terrorism).

Slovakia has not recorded any persons or groups preparing to commit a terrorist related criminal act on the territory of Slovakia in order to reach their goals. A potentially increased risk exists in misusing the territory of Slovakia by international terrorist organizations for transit, material-technical support and as a safe haven after committing attacks.

Regarding terrorism as a security threat, we find J .Piwowarski's interpretation of these security issues very interesting. Writing about the culture of security, he sees three dominant elements in perceiving threats. Those are in the form of a mental and spiritual layer; rational layer and organizational, legal and material level. On top of that, the concept of threat analysis should be relativized to the concept of security (Piwowarski, 2014, p. 9).

2. RISK FACTORS ENCOURAGING TERRORISM

Terrorism possesses a threat to the Slovak Republic mainly due to the presence of potentially risk subjects on its territory and in relation to its political and diplomatic activities and participation in military operations promoting peace abroad.

The Slovak Republic is currently not a primary target of any terrorist groups. However, on account of its active participation in international organizations, counter-terrorist activities and operations, the threat of a terrorist attack on the Slovak territory is increasing.

The increased risk of a terrorist attack on the Slovak territory relates mainly to the development of the security situation in Syria and publicly presented challenges of the IS terrorist leaders to expand worldwide Jihad.

In terms of possible risks and terrorist attacks, the security situation in the Slovak Republic is influenced by various factors. One of these factors are radical aliens from the regions with high occurrence of terrorist attacks residing in the Slovak Republic or with the citizenship. They usually have financial background, military training, organizational skills, links to risk regions and communities abroad, interest in weapon trafficking, interest in strategic objects and radical comments on the situation in critical regions and they usually participate in organized criminal activities and gather in organizations which may serve as a cover for their activities.

Another risk factor is an illegal migration of persons suspected of terrorism or involved in a terrorist group through the Slovak territory. Among all the detained migrants in Slovakia, the authorities have not identified any of the wanted terrorists. However, the Slovak authorities recorded several cases of suspicious activities of people residing in the Slovak Republic with links to the Islamic terrorist organizations. Intelligence activities and cooperation of national security forces with international partners significantly helped to identify these people.

Radicalization of society is one of the main issue which resonates throughout the EU. It is caused by the benevolence in current politics, where the nationalist tendencies are not meeting with a principal stand and refusal as in the past. These tendencies are getting even more popular among young generation. They express and post their opinions and comments on the current issues on the internet and social networks or chat rooms what significantly contributes to the radicalization (Križovský, Kavečanská, 2013, p. 60-69).

The SR operates with intelligence information about activities of the high-risk alien communities and individuals who support terrorist and militant organizations from the Slovak territory ideologically and logistically.

3. STRATEGIC OBJECTIVES IN THE FIGHT AGAINST TERRORISM

The EU Member States are primarily responsible for adopting measures against terrorism. The EU, however, still plays a fundamental supportive role because of an increasing transnational character of this phenomenon. In 2005, the Council adopted The EU Strategy for Combating Radicalization and Recruitment to Terrorism. Because of the changing character of this threat and increasing need to understand this issue, the strategy was revised in 2014 and complemented with a set of guidelines. It was updated again in 2017. In this matter, the Council adopted new guidelines for combating terrorism on March 7, 2017 with focus on the foreign terrorist fighters among others (National Action Plan for the Fight against Terrorism).

The National Action Plan for the Fight against Terrorism builds on the EU documents and creates a broad platform for combating terrorism on institutional, legal and executional level.

The aim is to create favorable conditions for consistent implementation of international treaties and commitments in the Slovak Republic such as the UN Security Council resolutions, regulations and framework decisions of the EU institutions, decrees of international institutions and specific states on sanctions against persons and groups suspected of and the promotion of terrorism. Slovakia is also creating conditions for tackling the basic problems in terms of coordination and cooperation among individual key actors combating terrorism what enables to eliminate root causes, criminogenic factors and potential perpetrators of terrorist acts.

The primary objective is to ensure protection of the life, health and property of the population and public authorities of the Slovak Republic against terrorist attacks. In the counter-terrorist actions, the main focus is placed especially on the preparedness and rapid response to a possible terrorist attack or other similar activities.

Another objective is to develop and implement legislative and institutional framework for the fight against terrorism in order to expand the capabilities of the Slovak intelligence services, special police units and authorities active in criminal procedure for the prevention, detection, investigation and prosecution of criminal offences of terrorism and create environment for effective cooperation with the existing EU institutions such as Europol, Eurojust. In the same time it is necessary to adopt such legal and organizational measures that would expand the powers of the Intelligence services and the Police Corps in gathering information necessary for combating terrorism without violating legal norms thereby preventing terrorism and acts of terror and prosecuting the perpetrators of such crimes.

The objective of the National Action Plan for the Fight against Terrorism is also to improve coordination, cooperation and means of exchanging experience between the Police Corps and the Intelligence services and other security services in the area of prevention, identification, verification, investigation and prosecution of terrorist act offences.

Another strategic objective in combating terrorism on the territory of the Slovak Republic is to develop cooperation with international security forces, state authorities and institutions, support international effort in combating terrorism by participating in international military and humanitarian missions, monitor security situation worldwide and security environment in the Slovak Republic in terms of possible terrorist attacks by gathering intelligence information, early recognition and uncovering of security risks and threats at home and abroad thereby contributing to reinforcement of internal security and protecting the interests of the Slovak Republic abroad. Proper analysis and assessment of terrorist threats

within the Slovak Republic and outside in cooperation with the EU and NATO institutions (e.g. Europol, SitCen, NOS) and provision of the uniform analysis on the terrorist threats in the Slovak Republic for the international partners is equally important (Piwowarski, 2014, p. 9).

An effective fight against terrorism is conditioned upon effective exchange of information, experience, knowledge between key actors participating in the fight against terrorism as well as among other state authorities dealing with prevention, detection, verification, investigation and prosecution of terrorist act offences only marginally. It is also important to manage the information flow, so that all the key actors combating terrorism receive information in the area where they have exclusive power, jurisdiction and authority set by the law. The aim is to use the information gathered by the participating subjects effectively. In particular, adopting adequate measures by the Police Corps based on the information from the Intelligence services and vice versa, assessing and verifying clues and information from the Police Corps, Ministry of Interior and other participating subjects by adequate intelligence methods and means as well as creating conditions for gathering, assessing and exchanging relevant intelligence information dealing with terrorism within the security system of the Slovak Republic and international cooperation in this area.

The National Action Plan for the Fight against Terrorism for 2015–2018 sets the goal to focus intelligence activities on identifying places and environment, which enables or facilitates establishment of terrorist cells' members or recruitment of new members into terrorist organizations with the intention to detect or eliminate factors leading to the recruitment and active participation of people in terrorist activities. Online communication, especially through social media represents a powerful instrument of terrorist organizations so that they can get worldwide attention, address new audience and gain financial support. Early and swift identification and removal of the online content can help to restrict this virtual disease. In many occasions, the perpetrators of these crimes were citizens of the states which they attacked or they emigrated into these states and were residing there for long period of time. Besides that, almost one third of the arrested for the terrorist offenses in 2016 were of 25 years of age or younger (Te-Sat, 2017) (European Parliament resolution of 11 February 2015 on anti-terrorism measures (2015/2530(RSP))). Creating more resistant society and stronger social ties can play an important role in decreasing the risk of radicalization especially in the youth, helping to neutralize terrorist propaganda.

A strategic goal in the fight against terrorism is also a need to revise legislation in this field and prepare legislative proposals so that the potentials and rights of the Intelligence services, law enforcement agencies and special police units in preventing, detecting, investigating and prosecuting terrorists acts will increase. It is also a need to create the environment to utilize the existing EU institutions such as Europol, Eurojust effectively and fulfill tasks of preventing terrorists from access to weapons (especially weapons of mass destruction), increase capacities in dealing with consequences of terrorist attacks, determine factors supporting terrorism as well as fulfill tasks regarding network security and its protection against terrorist attacks, eliminate potential risks to key state authorities, energy networks, control centers.

The issue of radicalization, and extremism is addressed in several documents in the Slovak Republic.

- a) Strategy on countering extremism represents a basic document defining strategic priorities of the Slovak Republic in the prevention and elimination of radicalism,

extremism and associated antisocial behaviors undermining basic human rights and freedoms and basics of the rule of law.

- b) The National Action Plan for the Fight against Terrorism for 2015–2018 took on some of the tasks from the previous period and through new tasks, extends the possibilities and instruments for the fight against terrorism in the Slovak Republic. The objective is to continue in creating favorable conditions for the consistent fulfillment and implementation of international commitments such as bilateral and multilateral treaties, the UN Security Council resolutions, regulations and framework decisions of the EU institutions, decrees of international institutions and specific states on sanctions against persons and groups suspected of terrorism and the promotion of terrorism.

4. NATIONAL LEGISLATION COVERING THE FIGHT AGAINST TERRORISM

Slovak legislation reacts to the development of terrorism and synchronizes its legal rules with the EU legal rules, e.g., Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475/JHA and amending Council Decision 2005/671/JHA.

Act no. 161 of 15 March 2018 amending act no.300/2015 Coll of Criminal Code defines criminal offense of terrorism as establishing, masterminding and supporting a terrorist group pursuant to section 297, terror pursuant to sections 313 and 314, terrorist attack pursuant to section 419, some forms of participation in terrorism pursuant to section 419b, financing of terrorism pursuant to section 419c, offences committed by reason of specific motivation pursuant to section 140d.. According to the new legal definition, terrorist offences commit those who act with the intention to undermine the constitutional system or defensibility of the state, seriously destabilize or defeat political, economic or social establishment of the state or a structure of an international organization, seriously intimidate inhabitants or to coerce a government of the state or an international organization to act or to omit to act

- a) threat by commitment or commit an offence endangering the life, health of people, their personal freedom or a property,
- b) destroy, disable or cause harm to utility facilities, transport system, telecommunication system, information system, including serious hindering of the functioning of an information system or preventing an information system, seabed platform, power plants, hydropower plant, healthcare facility or other important facilities from functioning, destroy public space or property or threaten to do so,
- c) destroy, damage, sabotage a water supply system, electric power supply or another natural resource with the objective to expose people to the death or grievous bodily injury or expose other person's property to substantial damage or threaten to do so,
- d) seizes control over a civilian vessel, aircraft or other means of transport or seabed platform or exercises control over any means of transport or platform or destroy or seriously damage the navigation system or interferes with its operation or make a false announcement and in doing so endanger the life and health of people, safety of the means of transport or expose another person's property to substantial damage or threaten to do so,

- e) ask for, produce, get, owns, possess, export, import, transport, deliver or in another way use explosives, nuclear, radioactive or chemical material, biological agents or toxins, firearms, nuclear weapons, radiological weapons, biological weapons, chemical weapons or other weapons or material of similar character or perform research or development of a nuclear weapon, biological weapon or other weapon or means of war or apparatus for producing, modification, storage and usage of nuclear materials, radioactive materials, chemical materials or biological agents and toxins or threaten to do so or,
- f) expose a group of people to the danger of death or grievous bodily harm or expose the property of another to the danger of substantial damage by causing fire or flooding or harmful effects of explosives, gas, electricity, radioactivity or other similarly dangerous substances or forces or commits other similarly dangerous acts or increases general endangerment or frustrates effort designated to prevent it or mitigate it or threaten to do.

Regarding participation in some forms of terrorism, legally prosecuted are those who:

- publicly incite to commit the act of terrorism or publicly defends commitment of such acts,
- gain knowledge of methods or techniques for production, storage, transport and using of explosives, firearms, nuclear, biological or chemical weapons, nuclear materials, radioactive materials, chemical materials, biological agents and toxins or other similarly maleficent or dangerous stuffs for the purposes of commitment of the act terrorism,
- provide knowledge of methods or techniques for production, storage, transport and using of explosives, firearms, nuclear, biological or chemical weapons, nuclear materials, radioactive materials, chemical materials, biological agents and toxins or other similarly maleficent or dangerous stuffs for the purposes of commitment of the act terrorism,
- ask another person to commit or participate in committing the act of terrorism.

Criminal offences of financing terrorism mean collecting or providing financial or other means, personally or through another person for an individual terrorists, terrorist group, its members or for commitment the act of terrorism, or collecting financial or other means for the purposes of their use or allowing their use for commitment of a criminal offence of travelling abroad for the purpose of terrorism from the Slovak Republic or through the territory of the Slovak Republic to another state for the purpose of commitment an act of terrorism (Act No. 300/2005 Coll. – the Criminal Code of the Slovak Republic as amended).

Overview of legislation related to the fight against terrorism:

- Act No. 460/1992 Coll. – the Constitution the Slovak Republic as amended.
- Act No. 300/2005 Coll. – the Criminal Code of the Slovak Republic as amended.
- Act No. 301/2005 Coll. – the Code of Criminal Procedure of the Slovak Republic as amended.
- Act No. 171/1993 on Police Force as amended.
- Act No. 256/1998 on Witness Protection as amended.
- Act No. 297/2008 on the Prevention of Legalization of Proceeds of Criminal Activity and Terrorist Financing and on Amendments and Supplements to Certain Acts as amended.
- Banking Act No. 483/2001 amending certain other acts.

- Act No 404/2011 on Residence of Aliens and Amendment and Supplementation of Certain Acts.
- Act No. 610/2003 on Electronic Communications as amended.
- Act No. 387/2002 on state administration in states of crises outside wartime or a state of war, as amended.
- Act No. 46/1993 on Slovak Intelligence Service as amended.
- Act No. 198/1994 on Military Intelligence as amended.
- Act No. 190/2003 Coll. on firearms and ammunition and on amendments to certain acts.
- Act No. 45/2011 Coll. on Critical Infrastructure.
- Act No. 144/2013 on trading with designated products the possession of which is limited for safety reasons and amending the Act of the National Council of the Slovak Republic No. 145/1995 Coll. on administrative fees, as amended.
- Act No. 39/2011 Coll. on Dual Use Items.
- Act No. 58/2014 Coll. on blasting goods and ammunition and on amendments and changes to certain acts.
- Act No. 392/2011 Coll. on Trading with Defence Industry Products and on amendments and supplements of certain acts.
- Act No. 480/2002 Coll. on Asylum and on change and amendments of some acts.
- Act No 126/2011 Coll. on carrying out international sanctions.

5. CONCLUSION

In general we can say that the problem of terrorism is adequately discussed in the Slovak Republic. The authorities and organizations in charge react to the needs and development of national and international situation. The SR continually develops tasks related to the fight against terrorism and implements international approaches into the process with an accent on the EU security environment as well as on specific conditions in the Slovak Republic. However, in terms of legislation, this issue is fragmented into significant number of Acts. In this regard, it would be convenient to think of adopting one Framework Act for the fight against terrorism and solve particular measures by decrees, regulations and directives in the individual resorts. We definitely have to describe rules, set rights and obligations and control mechanisms, including sanctions for noncompliance with these rules.

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TARIFF AS A TOOL FOR FINANCING PUBLIC TRANSPORT IN CITIES

The aim of the article is to present the role of public transport and its financing methods, with particular emphasis on the role of transport tariffs in Poland. Tariffs in collective transport, in addition to financing functions, i.e. covering costs of services, are increasingly fulfilling the functions of shaping the attractiveness of public transport, thereby supporting the city's competitiveness as a whole, both in relation to its residents and people who have jobs in the city or they are guests / tourists. The article hypothesizes that third generation tariffs are a financial tool that allows cities to manage local finance more effectively and affect the competitiveness and attractiveness of public transport. The research process used methods of critical analysis of literature, induction and deduction, logical inference and economic and financial analysis.

Keywords: tariff, local finance, public transport, public transport.

1. INTRODUCTION

Contemporary agglomerations compete with each other, and one of the scopes of competitiveness is the quality of life of citizens. By creating competitiveness in this area, urban organisms not only satisfy the current inhabitants but are also able to attract others who, via the current system of generating communal income, contribute directly or indirectly to municipal budgets.

One of the essential tools for shaping the competitive advantage of cities is the public transport tariff system. However, taking into account the complementarity of activities implemented under the adopted transport policy in the city, tariff solutions are considered and should be in conjunction with other systems operating in agglomeration / metropolitan areas, e.g. urban bike systems or Paid Parking Zone. Additionally, it is extremely important to include key future investments in the area of public transport in the city and agglomeration.

The introduction of free public transport, on the one hand, seems to be an attractive solution, however, it also brings threats not only to increase the burden of city budgets

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introducing such a solution, but also by getting rid of tools by managers of a number of city policies. An additional argument of using the tariff as a tool for creating the social and economic policy of the commune is the fact that the development of techniques and technologies as well as knowledge opens new possibilities in this area.

The attractiveness of urban collective public transport, understood as high functionality and affordability, is becoming a determinant of shaping the competitiveness / attractiveness of the city and agglomeration as a whole. This entails an increasing share of public funds / city budgets involving in financing public transportation. Some cities offer free public transport, accepting 100% of self-governments' budget, however, a number of cities try to finance the costs of functioning of public transportation based on tickets' income.

The purpose of the article is to present the role of public transport and its financing sources, with particular emphasis on the role of tariffs in Poland.

The paper is organized as follows: an introduction has been presented in Section I. Section II discusses the literature review, Section III presents methodological framework and the empirical results, Section IV includes conclusion.

2. TRANSPORT TARIFF AS A TOOL TO ACHIEVE THE CITY'S GOALS

Etymologically, the word 'tariff' derives from Arabic, in which the word 'tariff' means an announcement. The concept of tariff methodically identifies systematic lists of prices for goods and services. The tariff definition describes it as a price list for services, including the terms of applying these prices, given in a suitable form to public knowledge (Grzywacz, 1985). The tariff tool is often used to calculate prices for services such as telecommunications, electricity supply, gas supply and a range of other services, including transport services.

Tariff systems are often internal in nature, due to the lack of necessity for them to be confirmed by the competent state authority. The necessity of approving selected tariffs is, in turn, one of the tools of the socio-economic policy of the state. Regarding public transport in cities and agglomerations, shaping prices for public mass communication services is a part of the city's policy by authorized bodies (Takahashi, 2014).

The concept of transport tariff has practically a different interpretative range, from very narrow to very wide (Hamacher, Schobel, 2004). In terms of narrow transport, tariff is identified with the table of charges for transport services (Grzywacz, 1985). In the broader sense "(...) by the transport tariff is understood as an official list of fees (unit prices) for the performance of specific transport services (transport and special), as well as a set of regulations specifying the conditions of applying these rates and the manner calculating the fees for individual transport services according to them" (Grzywacz, 1985).

In sum, the transport tariff is understood not only as a table of fees along with the rules for calculating fees but also a set of rules and regulations defining the conditions for the performance of specific transport services (transport and forwarding) (Jackiewicz, Czech, Barcik, 2010). The scope of the tariffs currently in force has been influenced by the regulation of civil law relations and the association of economic turnover, as regards the provision of transport services or, more generally, transport and logistics services, including insurance services. Thus, the concept of tariff is very often understood in very narrow and colloquial terms – identified with the price list itself (Kozlak, 2007).

A high multiplicity of tariff solutions characterizes the modern market of passenger mass transport in urban areas; their goal is to try to satisfy the expectations of as many

customers as possible optimally. Due to the period of application of individual tariff systems/tariffs and the scope of their application, we can distinguish three consecutive generations (Pietrzak, 2017) (Figure 1).

Public transport organizers were forced to replace the standard forms of travel settlement – single-pass tickets (enabling one-way travel only), which give the ability to travel in a more flexible way, owing to changes in the needs and requirements of customers, as well as their more frequent choice of means of individual transport. To meet clients' needs, the tariff based on travel settlement centered on its duration was becoming more and more popular in cities. Time tariff is usually built on the principle of creating several time windows (e.g., 20, 40 and 60 minutes) and using different ticket denominations for them.

For obvious reasons, this accounting system is accepted primarily by those groups of customers who, while making their journey, make maximum use of the time provided for the selected ticket. The remaining groups are forced to buy a ticket that exceeds their real-time need to complete the journey. Carriers, realizing that the indicated ticket was not used often, even stipulated in the rules of carriage that it was not possible to transfer such a ticket, still active temporarily, to another user.

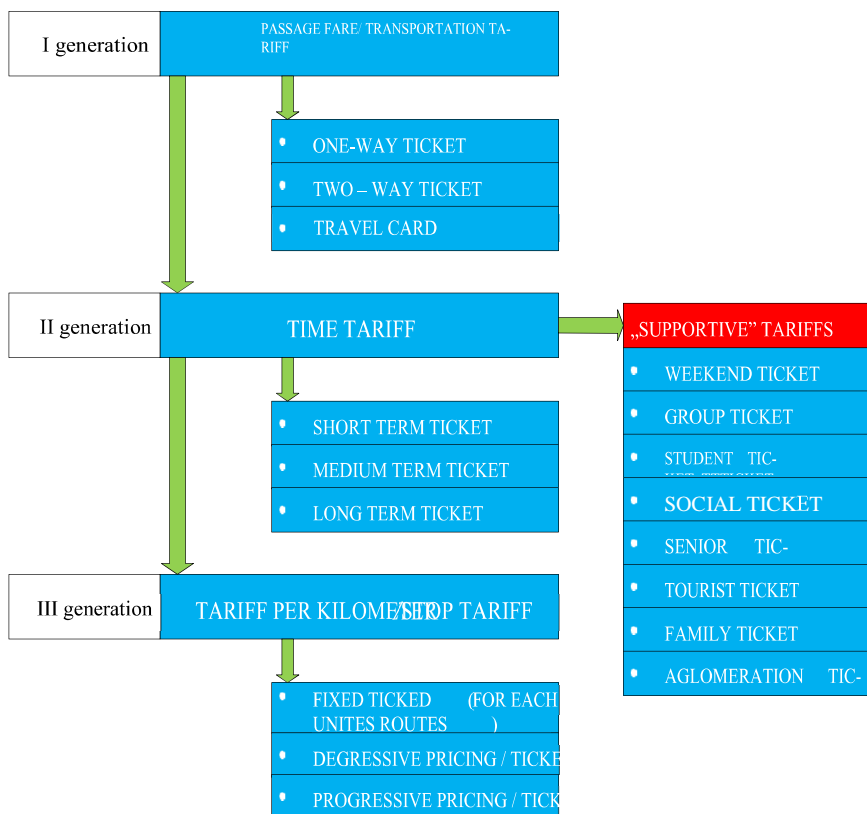


Fig. 1. Tariffs generations used in public mass transport

Source: (Pietrzak [ed.] 2017).

Table 1. Selected features of individual types of ticket tariffs in public transport

FEATURES	PASSAGE FARE	TIME TARIFF	STOP TARIFF	KILOMETRE TARIFF
TICKET KIND	<ul style="list-style-type: none"> simple and clear tariff only one denomination available – a ticket for one journey the possibility of using a paper ticket no need to introduce tele-format tools – an electronic ticket is not required 	<ul style="list-style-type: none"> availability of tickets with various denominations the occurrence of different tickets requires that you read the timetable and fit the appropriate ticket until the journey provided for in the breakdown possible use of an electronic ticket 	<ul style="list-style-type: none"> lack of unambiguously defined tickets – a system based on calculating travel distance is used (usually based on the number of kilometers traveled) the need to use an electronic ticket 	<ul style="list-style-type: none"> lack of clearly defined tickets – a system based on calculating travel distance is used (usually based on the number of kilometers traveled) the need to use an e-ticket
TICKET PRICE	<ul style="list-style-type: none"> the fixed fee charged for the journey is independent of the length of the journey (ticket valid to the end stop of the given route) a solution that is beneficial for passengers who make long journeys with one means of transport, an unfavorable solution for passengers making short trips one means of transport 	<ul style="list-style-type: none"> toll depending on travel time availability of tickets with various denominations allows selection of the most suited to the needs a solution that is beneficial for passengers making long journeys – usually a digressive tariff is used when creating new "time windows" the use of specific "time windows" of specific tickets, usually with the adoption of a certain minimum value (e.g. 10 or 15 minutes), is not beneficial for passengers making very short trips 	<ul style="list-style-type: none"> toll depending on the number of stops a solution beneficial for passengers making short trips (they apply a reduced fee accordingly), as well as for long trips (usually a digressive tariff is used for settlement) 	<ul style="list-style-type: none"> a toll depending on the number of kilometers driven a solution that is beneficial for both passengers who travel short distances (they use a correspondingly reduced fee), as well as long travels (usually a digressive tariff is used for settlement)

Table 1 (cont.). Selected features of individual types of ticket tariffs in public transport

FEATURES	PASSAGE FARE	TIME TARIFF	STOP TARIFF	KILOMETRE TARIFF
IMPACT OF ENVIRONMENT	<ul style="list-style-type: none"> no influence of the number and density of stops on the validity of the ticket no impact of the travel time of the means of transport (planned in the timetable and actual) on the validity of the ticket 	<ul style="list-style-type: none"> significant impact of the number and density of stops and estimated travel time of the means of transport on timetable design – and thus the validity of the ticket, significant impact of road conditions, congestion, failure on the validity of the ticket, disputable issues regarding ticket control when its validity is exceeded 	<ul style="list-style-type: none"> no impact of the travel time of the means of transport (planned in the timetable and actual) on the validity of the ticket noticeable influence of the density of stops on a given line on the potential range "distance" ticket 	<ul style="list-style-type: none"> no impact of the number and density of stops, as well as the travel time of the means of transport (planned in the distribution and the actual one) on the validity of the ticket
MULTIMODAL TRAVEL	<ul style="list-style-type: none"> no possibility to use the ticket in the next means of transport the need to purchase a new ticket for the next means of transport as part of a multimodal journey 	<ul style="list-style-type: none"> connecting transfer limited only by the period of validity of the ticket during the multimodal journey, the validity period of the ticket expires also during the waiting period for the next means of transport delay of one means of transport limits the possibility of continuing the multimodal journey within one ticket 	<ul style="list-style-type: none"> possibility of changing between one journey (if the organizer does not exceed the maximum time allowed between leaving the first means of transport and starting to use the next one – usually 10-15 minutes) the delay of one means of transport does not affect the final price of the journey as part of one multimodal journey 	<ul style="list-style-type: none"> possibility of transferring as part of one journey (if the organizer does not exceed the maximum time between leaving the first means of transport and starting to use the next one – usually 10-15 minutes) the delay of one means of transport does not affect the final price of the journey as part of a single multimodal journey

Table 1 (cont.). Selected features of individual types of ticket tariffs in public transport

FEATURES	PASSAGE FARE	TIME TARIFF	STOP TARIFF	KILOMETRE TARIFF
OTHER	<ul style="list-style-type: none"> the possibility of extending the planned journey by successive stops on a given line without the necessity of incurring additional costs 	<ul style="list-style-type: none"> significantly shorter "distance" of time ticket in city centers – the client of municipal public transport, consciously taking action to minimize congestion – paradoxically – is burdened with its consequences, starting next stops on a given line may cause the customer to move to another, more expensive "time window" 	<ul style="list-style-type: none"> significantly shorter "distance" of the stop ticket in city centers the higher density of stops in selected locations starting next stops on a given line causes an increase in the fee that the client must incur when completing his journey (while maintaining an unchanged travel distance) 	<ul style="list-style-type: none"> the system of records of kilometers traveled by the passenger must take into account the problems resulting from: the need to correct the calculation of the kilometers traveled during a multimodal journey (changes) on the need to correct the calculation of kilometers traveled during detours / one-off route changes
IMPLEMENTATION/ USAGE	<ul style="list-style-type: none"> due to the adaptation of the ticket for only one trip, the solution indicated for use mainly in small cities with a small number of lines 	<ul style="list-style-type: none"> solution recommended for use mainly in large cities with a dense network of lines well integrated temporarily 	<ul style="list-style-type: none"> solution indicated for use mainly in urban areas, with evenly spaced public transport stops 	<ul style="list-style-type: none"> solution indicated for use in large cities, metropolitan areas, metropolitan areas, where there is a great opportunity to choose different public transport means, including means of railway transport (urban, agglomeration and metro railways)

Source: (Pietrzak [ed.] 2017).

Such carrier practices also met with the reaction of the Office of Competition and Consumer Protection, which called in some instances for "discontinuation of activities that could constitute practices infringing collective consumer interests". The introduction of the time tariff (Table 1) in place of (or as an additional form) single-trip ticket was theoretically a significant "nod" by the public transport organizer towards new customer requirements; Customers who wanted to travel by only one means of transport on a fairly short distance or making their trip required using more vehicles (multimodal travel/broken journey).

A very important aspect of the time tariff is the impact of traffic on the network and the density of stops on the varied distance range of the ticket. Individual customers, when purchasing a time ticket with the same denomination, due to the diverse nature of the network, have a significantly opposing buying power of such a ticket (in terms of its potential for servicing a specific travel distance expressed in kilometers possible to travel). In addition, due to the differences between the time-table and the actual travel time, resulting from delays in public transport, there is a discrepancy in the interpretation at which moment the time ticket expires – whether after the actual time provided for its denomination, or after reaching the place chosen by the customer, which according to the timetable falls within the time value provided for the given ticket. Organizers of public transport, observing changes in the preferences and needs of customers, as well as the process of the annual decrease in the number of purchased tickets in most urban areas began in recent years to implement the process of broadly understood changes in the construction of a transport tariff. They aimed to create such a tariff that would contribute to increasing interest in public transport.

The new, emerging tariff solutions, generally defined as the third-generation tariff group, are intended to allow the application of different rates depending on the length of the journey, while providing, within the purchased ticket, the possibility of changing modes or transport modes (broken and multimodal transport). The implementation of the indicated solutions is currently facilitated mainly due to the highly developed ICT tools system. One example is the so-called stop tariff and kilometer tariff (Table 1).

3. ANALYSIS OF BUDGETS OF SELECTED POLISH CITIES IN THE SCOPE OF CO-FINANCING OF PUBLIC TRANSPORT

Municipal tasks execution in the field of local public transport requires securing sources of financing, as fees charged pursuant to the Act of 16th December 2010 on public collective transport, in connection with the provision of public transport services, do not cover the entire expenditures spending by municipalities or their organizational units. The amount of expenses related to the local collective transport varies depending on the municipality and the urban public transport system. The shape of the urban local transport system and its organization are mainly determined by the size of the commune, usually measured by population and area.

3.1. Methodology and research sample

When selecting cities for analysis, it should be borne in mind that not all small urban centers have urban public transport systems; in large and major cities, however, these systems are an inseparable part of them (Dydkowski, 2014). Considering the parameter, which is the size of the unit, for the purpose of analyzing and examining budgets in terms of financing local public transport by municipalities, the study selected cities on the rights of

the poviats over 200,000 inhabitants (the exception is Sopot, which was considered due to its transport connections within the Tri-City).

The purpose of the analysis of municipal budgets (cities with poviats rights) was to assess the total expenditure borne by municipalities for financing local public transport and to determine the number of subsidies that these municipalities incur in connection with the implementation of tasks related to local public transport. The analysis allowed us to make a diagnosis, and, in particular, to study the amount of expenditure and the amount of subsidies realized by selected cities in 2007–2017, with data for 2017 being the forecasted figures. The analysis covered 11 cities which were considered comparable due to the specificity of local public transport, including: Szczecin, Poznan, Wroclaw, Warsaw, Krakow, Torun, Bydgoszcz, Gdansk, Gdynia, Sopot and Lodz.

For the purpose of budget analysis and analysis, data from public statistics available in the Public Information Bulletin (BIP) were used. For the analysis of communal expenditure incurred in connection with the implementation of the task defined as local collective transport, financial data from budget classification 6004 was used. Local collective transport including current and property expenditure departments, own income, whereby the category of own income corresponds to that defined by the Act of 13th November 2003 on the income of local self-government units by LGU revenues. Data on the population of individual cities come from the Local and Regional Data Bank. The number of subsidies to the public collective transport port was calculated as the amount of current expenditure on local public transport reduced by revenues from public transport tickets.

The research of budgets of selected cities was carried out in terms of diagnosing the amount of co-financing of public transport in the overall budget structure and as a subsidy per capita. Overall, Warsaw and Sopot stand out clearly in terms of the highest and lowest data volumes respectively; however, these differences are not so significant for both cities in the per capita ranking. Warsaw is a specific unit, both because of its functions as the capital, but also because of its central location, which determines its communication with the surroundings. Warsaw is also the city with the largest population, area, population density and the largest number of entities and jobs in Poland (Dydkowski, 2014). Sopot, in turn, in the subsequent years covered by the analysis was the leader in the ranking. Analysis of budgets of selected cities in terms of the amount of expenses incurred in connection with the implementation of local public transport services in 2007–2017 showed that among the surveyed units, Warsaw had the highest spending level in the analyzed period, while the lowest level of expenditure was shown by Sopot (Table 2).

On average, in the analyzed period of the city covered by the analysis, they spent PLN 470 million on purposes related to urban transport, the minimum expenditure amounted to PLN 2.6 million, and the maximum was PLN 4 097 million. Detailed data is presented in Table 2.

Analyzing the budget data of cities, the crisis of 2008+ should be taken into account, which impact on the budgets of local government units in Poland was directed both to the income side and the expenditure side of budgets. In particular, the impact of the crisis was manifested by a decrease in revenues from local government taxes and income from local government shares in taxes: income from individuals and from legal persons. On the expenditure side, on the other hand, self-governments reduced expenses or postponed investment acquisitions by making financial restructuring.

Table 2. Expenditure on local public transport (6004) in the examined cities of Poland in the years 2007–2017 [PLN]

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BYDGOSZCZ	139 906 983,09	167 317 676,27	165 419 625,82	175 502 795,03	215 201 817,00	224 112 992,21	190 381 673,57	223 597 680,21	215 152 696,15	209 808 639,62	258 119 269,00
GDAŃSK	274 334 240,00	211 682 777,00	217 234 502,00	289 039 217,00	252 303 821,00	322 726 350,00	304 700 192,00	373 401 344,00	311 584 802,35	312 601 901,00	341 179 614,00
GDNIA	112 862 123,00	130 548 149,00	158 018 426,00	165 159 855,00	169 346 831,00	166 963 701,00	162 132 044,00	163 244 388,00	160 238 834,00	191 697 165,00	166 365 242,00
POZNAŃ	133 883 649,00	162 990 995,08	355 769 051,47	376 330 141,14	642 932 762,20	625 361 371,40	559 767 408,43	460 243 607,60	497 792 126,41	485 160 155,55	550 005 640,00
KRAKÓW	292 829 050,00	341 479 362,00	351 500 000,00	364 284 660,00	333 355 491,00	450 461 818,00	548 560 465,00	518 178 040,00	515 499 549,00	507 095 803,00	468 098 550,00
ŁÓDŹ	269 191 055,77	306 126 307,00	334 251 263,68	336 952 179,33	353 682 074,00	368 617 082,00	379 542 834,00	331 353 003,00	349 797 265,00	377 457 052,00	410 692 818,00
SOPÓT	2 564 584,73	3 057 518,23	3 343 542,00	7 351 500,00	6 263 100,00	3 960 534,99	4 280 482,08	4 358 237,04	4 411 920,00	4 382 723,89	4 201 500,00
SZCZECIN	78 984 225,00	107 523 300	183 781 563,00	129 809 786,00	100 727 942,00	210 293 553,00	213 472 200,00	300 784 633,00	614 634 860,00	242 291 554,00	236 187 299,00
TORUŃ	12 499 461,00	12 884 244,00	13 599 143,00	16 871 105,00	24 212 058,00	62 612 932,00	67 814 889,00	78 634 007,00	71 787 587,00	72 673 853,00	81 335 000,00
WARSZAWA	1 283 813 252,00	1 868 492 556,08	1 737 522 647,18	2 030 390 185,72	2 796 942 663,27	3 543 903 919,73	3 416 400 977,30	4 096 535 448,72	2 801 899 049,46	2 939 691 133,83	3 331 335 659,00
WROCLAW	289 631 962,44	313 162 830,51	322 696 800,60	325 464 309,49	312 451 387,96	330 603 369,40	329 740 377,64	349 439 215,57	349 874 150,15	370 578 950,63	373 967 850,00

Source: own elaboration based on BIP.

The impact of the crisis was mitigated by the availability of EU funds from the financial perspective 2007–2013, which selected local governments who spent on investments in the field of local transport. After 2014, one should also bear in mind the amount of investment expenditure incurred by local governments with the participation of EU funds from programmes financed under the 2014–2020 financial perspective. An important analysis is provided by the analysis of expenditure on local public transport in selected cities per capita.

Two cities, Warsaw and Poznan, stand out, and in 2015 also Szczecin, which has spent additional funds (PLN 399.5 million) on investment and investment purchases. Taking into account the ratio of expenditures incurred from the budgets of the analyzed cities to local collective transport in relation to their total revenues, local transports are issued by individual cities: Warsaw – on average 22%, Poznan – 16%, Bydgoszcz – 15%, Gdynia – 14%, Gdansk – 13%, Torun – 13%, Szczecin – 13%, Krakow – 12%, Lodz – 11%, Wroclaw – 10%, Torun – 5%, Sopot – 1%. In addition to investment costs, such as exchange and modernization of rolling stock, the parameter explaining the sum of costs incurred is saturation with communication services and transport performance, which in the capital is at the highest level compared to the analyzed cities (230 million per kilometer according to 2016 data).

When comparing the total expenditure incurred for communication with the number of carriages taken, then for Warsaw (PLN 10.17 for one wzkm) there are successively: Poznan (PLN 6.96), Olsztyn (PLN 6.16), Gdansk (5, PLN 90), Gdynia (PLN 5.25), Szczecin (PLN 4.87), Bydgoszcz (PLN 4.75), Krakow (PLN 4.33), KZK GOP (PLN 4.26), Wroclaw (4.21) PLN), Lublin and Rzeszow (PLN 3.97 each), Bialystok (PLN 3.83), Lodz (PLN 3.62), Kielce (PLN 3.05) and Opole (PLN 2.88) (Wroński, 2016). The analysis of co-financing of public transport costs in individual cities was based on current expenditures incurred by individual units for this purpose. The amount of current expenditure on local collective transport is presented in Table 3.

Analysis of current expenditure per capita incurred on local collective transport in cities confirms similar trends that occurred in the analysis of total public transport expenditure. The largest number of local congregational transport per capita is generated by Warsaw, Poznan, Gdynia and Gdansk; the lowest expenditure level is found in Sopot and Torun. An analysis of the level of co-financing of public transport in individual cities showed that only in three of them Krakow, Szczecin and Torun in the selected years, the receipts from communication tickets were dominated by the value of current expenditure incurred, and these cities thus obtained a surplus. In Table 4 these periods have been marked with the number 0.

In period of 2007–2017, Warsaw (PLN 872), Bydgoszcz (PLN 673), Poznan (PLN 396), Gdynia (PLN 338), Gdansk (PLN 320), Wroclaw (PLN 297), Lodz (PLN 292) paid the most for public transport. PLN), Krakow (PLN 219), Szczecin (PLN 169), Torun (PLN 70) and Sopot (PLN 55). The volume of financing of public transport in total in individual cities is presented in Table 5.

An analysis of city budgets in terms of spending on public transport financing in 2007–2017 showed that these expenditures represent a significant burden on city budgets, and the revenues from public transport tickets do not ensure their full financing (on average they cover 40% of the demand for funding). Both on the side of current expenditure (the cost of providing services) and property expenses (including investment costs) allocated for financing urban transport, an upward trend is visible.

Table 3. Current expenditure on local public transport (6004) in the analyzed cities of Poland in the years 2007–2017 [PLN per capita]

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BYDGOSZCZ	359,21	411,62	427,63	445,52	462,07	487,02	4 884,73	589,32	585,40	492,66	509,78
GDĄŃSK	493,44	386,49	460,18	485,41	484,15	626,13	588,09	641,41	651,75	641,72	645,65
GDYŃIA	438,26	518,14	600,16	619,07	642,67	655,67	640,47	625,33	623,94	635,36	665,11
POZNAŃ	238,68	292,48	641,93	624,26	648,48	669,36	706,17	743,19	780,82	772,91	881,28
KRAKÓW	387,04	452,52	465,56	480,75	439,12	594,02	722,75	680,14	677,34	662,59	611,64
ŁÓDŹ	357,40	409,72	450,24	461,18	487,80	512,71	533,57	469,34	499,01	541,93	589,65
SOPOT	65,50	78,76	86,94	156,64	97,53	103,63	112,93	115,74	118,50	118,94	114,02
SZCZECIN	131,38	159,34	203,73	195,40	215,72	500,31	505,70	517,43	547,68	542,65	571,89
TORUŃ	24,90	38,44	38,61	45,53	88,13	283,57	304,69	329,87	335,63	345,56	349,03
WARSZAWA	729,49	835,02	986,14	1 110,97	1 277,00	1 433,17	1 345,97	1 648,18	1 513,20	1 663,75	1 682,48
WROCLAW	457,61	495,38	510,48	516,04	494,98	523,78	521,69	550,74	550,33	581,13	586,45

Source: own elaboration based on BIP.

Table 4. Co-financing of local public transport per capita in the examined cities of Poland in the years 2007–2017 [PLN]

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BYDGOSZCZ	170,66	214,22	235,79	244,02	264,07	280,77	4 677,19	372,24	373,64	281,46	288,81
GDANSK	293,08	162,39	234,97	255,77	265,26	407,20	370,77	413,88	309,30	411,38	406,08
GDYNIA	181,62	257,23	347,35	368,41	372,01	381,95	364,90	349,07	350,89	363,80	380,67
POZNAŃ	238,68	292,48	395,76	378,06	394,68	385,53	395,57	417,94	455,88	453,42	552,35
KRAKÓW	94,02	146,07	138,82	196,11	0,00	272,73	372,47	329,30	321,02	296,30	252,22
ŁÓDŹ	183,88	248,46	291,45	291,46	308,50	315,20	336,69	264,14	301,58	338,54	336,67
SOPOT	31,16	42,13	40,94	112,90	41,56	48,83	53,14	59,89	60,08	61,40	59,63
SZCZECIN	0,00	0,00	0,00	0,00	17,72	269,09	274,70	293,55	325,62	330,64	357,01
TORUŃ	0,00	0,00	0,00	0,00	0,00	92,94	99,55	131,44	144,09	152,85	157,44
WARSZAWA	449,59	501,17	626,46	739,62	835,36	969,14	902,71	1 187,52	1 026,08	1 177,51	1 181,99
WROCLAW	271,04	311,36	332,79	325,20	290,84	275,98	261,26	286,70	284,37	310,51	317,91

Source: own elaboration based on BIP.

Table 5. Co-financing of local public transport in the analyzed cities of Poland in the years 2007–2017 [PLN]

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BYDGOSZCZ	61 647 299,23	76 890 365,64	84 329 712,55	88 930 522,80	95 863 015,88	101 428 773,74	168 111 245,73	133 133 369,28	132 884 000,52	99 619 169,03	102 222 173,00
GDAŃSK	133 563 148,00	73 980 110,00	107 284 202,00	117 784 524,00	122 157 039,00	187 486 854,00	171 122 061,00	191 002 075,00	142 972 097,00	190 777 731,00	188 322 010,00
GDYŃIA	45 449 564,00	64 115 890,00	86 093 144,00	91 905 052,00	92 608 892,00	95 000 489,00	90 511 056,00	86 507 383,00	86 837 088,00	89 855 843,00	94 023 165,00
POZNAŃ	133 883 649,00	162 990 995,08	219 339 284,78	210 054 144,71	218 479 876,15	212 329 972,64	216 781 577,80	228 062 673,36	247 244 717,59	245 012 899,57	298 471 774,00
KRAKÓW	71 136 351,00	110 226 160,00	104 812 300,00	148 598 660,00	0,00	206 820 166,00	282 699 621,00	250 888 003,00	244 318 674,00	226 766 889,00	193 029 550,00
ŁÓDŹ	138 499 683,71	185 634 703,40	216 366 275,59	212 952 179,33	223 682 074,00	226 617 082,00	239 497 417,65	186 484 774,64	211 400 916,63	235 795 854,71	234 492 818,00
SOPÓT	1 219 852,53	1 635 383,60	1 574 621,91	4 387 103,40	1 603 518,64	1 865 947,95	2 014 330,64	2 255 007,75	2 237 005,11	2 262 529,45	2 197 250,00
SZCZECIŃ	0,00	0,00	0,00	0,00	7 257 908,00	110 034 733,00	112 126 585,00	119 528 814,00	132 090 150,00	133 868 169,00	144 544 957,00
TORUŃ	0,00	0,00	0,00	0,00	0,00	18 987 699,00	20 253 172,00	26 703 412,00	29 206 467,00	30 954 343,00	31 885 000,00
WARSZAWA	767 287 378,00	856 889 516,76	1 074 034 175,54	1 257 442 303,30	1 427 212 014,28	1 662 582 972,48	1 556 644 190,00	2 060 880 447,00	1 789 846 312,00	2 065 324 318,00	2 073 182 959,00
WROCLAW	171 552 405,59	196 828 631,32	210 374 460,88	205 103 166,06	183 591 036,84	174 198 145,19	165 136 111,54	181 909 628,53	180 789 650,38	198 008 353,99	202 727 850,00

Source: own elaboration based on BIP.

This is determined by various factors, including the need to provide transport services for residents of developing and growing cities, the growing rate of individual motorization, the degree of amortization of fixed assets, changed consumption patterns, growing customer requirements and undertaken investments (Abrate, Piacenza, Vannoni, 2007). It should be expected that this trend will continue in the coming years, which will force changes in the method of calculating tariffs, as well as the model of providing public transport services by municipalities.

4. CONCLUSIONS

The impact on the attractiveness and competitiveness of public transport in relation to individual motorization is not only related to environmental protection issues, i.e., reduction of green gas emissions, but is a part of widely defined goals of sustainable development and a modern image of the city.

Some cities offer free public transport, however, a number of cities try to cover the costs of public transport collecting ticket revenues, and using the tariff as a marketing tool and achieving other goals included in the city/metropolis strategy. An illustration of such goals is, for example, senior policy (e.g., free communication for seniors), pro-family policy (e.g., monthly tickets for 1 PLN for children from the so-called large family). Thus, the designing of the tariff system is the result of a bundle of goals from which the income function does not have to be the most important. This is reflected in the course of increasing the share of public finances (budget) in financing public transport.

The implementation of costless communication is a significant limitation and deprivation of the city/metropolitan authorities of the possibility of affecting selected areas of social policy by means of a transport tariff. In the case of free public transport, costs are borne by the city/and the beneficiaries are not always residents of the commune. Very often, the beneficiaries may become residents of neighboring communes, which municipalities are leading an aggressive policy towards the municipality center by charging both residents and other sources of communal income (e.g., investors etc.). Each of the analyzed tariffs has specific features that clearly indicate its applicability.

Transport operators, choosing individual ones, should be aware of the wide spectrum of individual solutions, as well as the local specificity of the transport system. A tariff that works efficiently in another area does not always have a chance of full implementation in the home area. It is also important that in planning the implementation of new tariff solutions, it is worth keeping in mind any changes which are planned in the forthcoming years in the public transport system of the area - for example, the introduction of new branches of transport (subway, city rail, etc.). Additionally, it should be emphasized that the tariff system of public mass communication also becomes a tool for implementing city/agglomeration policy and shows a certain modernity of solutions adopted and openness to the needs of residents who increasingly contribute to the costs of maintaining this system. That is why, increasingly, public budgets of cities are a source of financing the functioning of collective public transport, i.e., their share in financing total costs are increasing.

Metropolises and large urban agglomerations in Poland need to take into account the development of telecommunications and IT technologies both in the collection and charging of charges for mass transit services, that strongly affects the construction of tariffs. The solutions adopted are strongly determined by the share of public transport costs in the city budget. A small share of costs in the self-government entities' budget as well as a small

share of covering these costs with receipts from tickets creates greater inclination of decision-makers to introduce free public transport.

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LEGAL ACTS

- Ustawa z dnia 16 grudnia 2010 r. o publicznym transporcie zbiorowym (tekst jedn. Dz.U. z 2018 r., poz. 2016).
- Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 17 marca 2016 r. w sprawie ogłoszenia jednolitego tekstu ustawy o samorządzie gminnym (Dz.U. z 2016 r., poz. 446).
- Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 28 kwietnia 2010 r. w sprawie ogłoszenia jednolitego tekstu ustawy o dochodach jednostek samorządu terytorialnego (Dz.U. z 2010 r., nr 80, poz. 526).

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MANAGEMENT OF CARGO TRANSPORT AT AIRPORTS

Transport management is an important logistics activity. The choice of transport branches ultimately boils down to two important elements such as costs and quality of services. The features and elements related to reliability, speed, the ability to control and carriage monitoring are also taken into account. Despite high costs, air transport is part of the global value chain that enables parts to be delivered to factories located in different parts of the world in a short time. Air transport creates 3.6% of the global value of GDP. The main advantage of this branch of transport is the short delivery time and high level of security of goods, including those sensitive to shocks. On the basis of statistical data, the tendency of increasing cargo transport in 2012-2017 can be seen. The paper presents the specification of cargoes transported by air, applicable documentation, a waybill and cargo units, and types of goods security.

Keywords: cargo transport, waybill, cargo units, air freight.

1. INTRODUCTION

Air transport is an important element of the economic infrastructure as it contributes to the dynamic development of cities and regions. The pace of development of air transport has the significant impact on the development of the global economy. It enables the free movement of people, goods and capital between cities. Air transport is the only one with a strong time and space advantage, which is one of the greatest achievements of today's civilization. High reliability, a wide range of transport, security of delivery and continuous monitoring of the flow of goods are factors encouraging the choice of this mode of transport.

Over the last decade, the demand for air freight has increased significantly. This was also reflected in an increase in the number of air cargoes, the addition of cargo terminals and the number of new cargo routes (Thelle, Sonne, 2018). According to Boeing's World Air Cargo Forecasting Report (WACF), global cargo volumes are expected to increase by an average of 4.2% per year over the next 20 years (Boeing, 2018). A large number of shipments is transported in cargo holds of passenger aircraft with unused space. The reason is the low supply of loads. The main problem lies with the market. In relation to the rela-

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tively high value of goods, comparing to the weight and volume, the volume of exports and imports in Poland is still insignificant. According to the research carried out in 2005, by Dr. J. Kasard and D. Sullivan, it was shown that the amount of cargo transport was correlated with the value of the country's GDP and foreign investments (Kasard, Sullivan, 2006).

Air transport in the world of trade in goods in terms of the mass of transported cargo has a small share. It is 1% taking into account transport performance, while taking into account the value of transported cargo in the world, this share is at the level of 35%. By air, 76.200 tons are transported annually in Poland, or approximately 1% of all air transport in Europe. The largest share (70%) in transporting goods by air is occupied by Belgium, France, the Netherlands, Germany and the United Kingdom. This proves that cargo transport is closely correlated with the economic development of a given country (Stajniak, Konecka, 2017). The most advantageous use of air transport is long-distance transport both in continental and intercontinental relations (Neider, 2015).

An important problem in the field of freight transport is the characteristics of the cargo market, its size and requirements for the carriage of cargo by air. Presentation of the set requirements may be helpful when choosing this type of transport.

The characteristics of the cargo market, its size and requirements for the carriage of cargo by air is an important problem in the field of freight transport. A presentation of the requirements may be helpful when choosing this type of transport. This article is an attempt to present the specifications of cargo transported by air, necessary documents from the forwarding party and legal regulations. The development of cargo transport in 2012-2017 in Poland was also presented. The subject of the research is an analysis of the literature on the subject, statistical data of the Central Statistical Office and the Civil Aviation Office. The research methods include a method of analysis and criticism of the subject.

2. SPECIFICATION OF LOADS TRANSPORTED IN AIR TRANSPORT

According to data from the Central Statistical Office, in Poland over the years 2012-2017 there was an upward trend in the transport of cargo by air. Against the background of other modes of transport, a small number of loads are carried by air (2017 – only 0.003% of all transported loads). Table 1 presents the numerical data of the transported goods from 2012 to 2017.

Table 1. Cargo transportation in Poland, by type of transport (in thous. of tons)

Year	Rail transport	Car transport	Pipeline transport	Sea transport	Inland water transport	Air transport	Total cargo transport
2012	230878	1493386	52985	7476	4579	41	1789345
2013	232596	1553050	50656	6965	5044	37	1848348
2014	227820	1547883	49810	6781	7629	38	1839961
2015	224320	1505719	54850	6963	11928	38	1803818
2016	222523	1546572	54058	7248	6210	41	1836652
2017	239501	1747266	52393	8254	5777	53	2053244

Author's own research based on the data from the CSO <http://stat.gov.pl/obszary-tematyczne/transport-i-laczynosc/transport/przewozy-ladunkow-i-pasazerow-w-2017-roku,11,6.html> (Access on: 20 Januar 2019).

Cargo transportation by air in 2017 amounted to 52.7 thousand tons, thus increased by 27.2% compared to 2016. At airports, 10.9% more cargo was reloaded in 2017 compared to the previous year. The registry of the Civil Aviation Office also noted an increase in the use of the number of aircrafts in civil aviation by 24 airplanes compared to the state recorded a year earlier. In total, in 2017, the number of aircrafts amounted to 1276 units. Comparing 2017 and 2016, airport traffic was higher by 7.4% and the number of commercial aviation takeoffs and landings increased by 8.6% (GUS, 2018). Figure 1 presents the data from the Civil Aviation Office regarding cargo handled by individual airports in Poland in 2017.

The International Air Transport Association provides data on air transport. In Europe, the total value of GDP supported by aviation in 2017 amounted to USD 823 billion. The annual air freight amounted to 10.1 million tons. 3.6% of global GDP is supported by aviation (IATA, 2017).

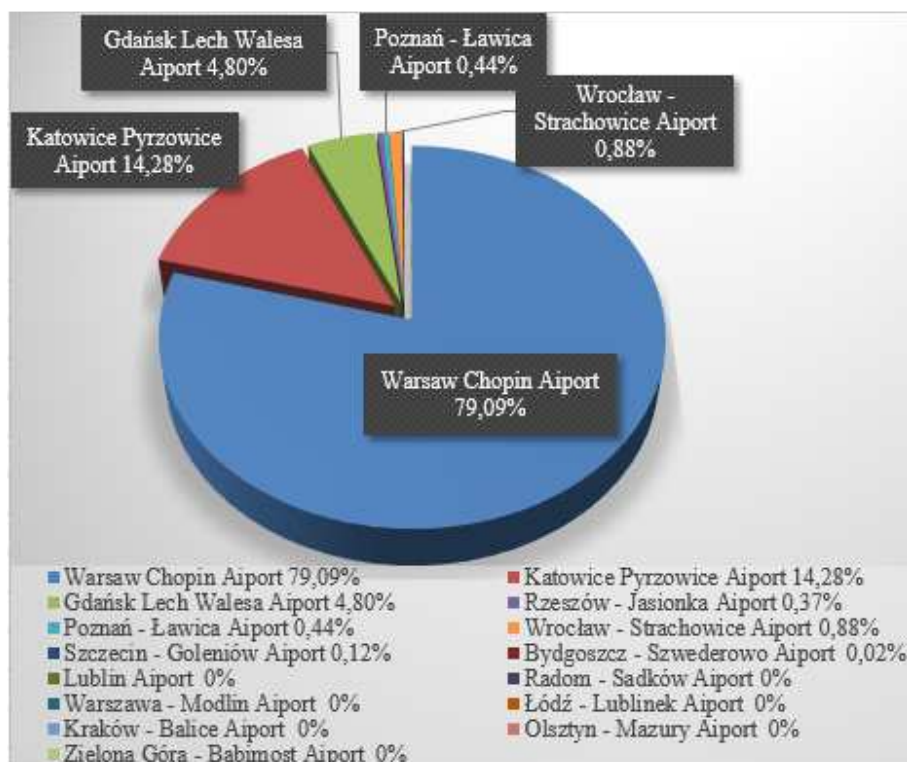


Fig.1. Percentage share of the cargo on-board served in 2017 divided into airports in Poland

Author's own research based on: <http://www.ulc.gov.pl/pl/regulacja-ryнку/statystyki-i-analizy-ryнку-transportu-lotniczego/3730-statystyki-przewoz-cargo> (20.01.2019).

The main advantage in the transport of cargo by air is the short delivery time. The advantages of this type of transport include: the greatest possible range, high security of goods, including those sensitive to shocks, transport speed, which is a special advantage in the case of perishable products or postal items. In spite of strengths, the role of air transport in freight

transport is often treated marginally. The reasons result from the high costs of organizing the entire logistics process as well as the weight limit and the size of the goods transported (Liberadzki, Mindur, 2007).

Currently, the most commonly transported goods by air are perishable, high-value products, rapidly depreciating, sensitive to transport. These are express parcels, spare parts, production accessories, electronics, pharmaceuticals, plants (especially flowers), groceries (citrus) and animals. Transport by air ensures an ability to control the temperature, maintain a stable environment that is suited to the transported cargo. The global value chains are also an opportunity for air transport, transporting subassemblies from suppliers to factories around the world. The automotive industry is a good example where the carriage of car parts is on the agenda (Walków, 2019).

Not only the cargo with small mass and volume is transported, but also the oversized goods. Therefore, airports that can handle large transport planes are obliged to have adequate length of runways and have an optimal access to the airport, connection of road, rail and sea infrastructure - depending on location. The availability of specialized equipment facilitating loading and unloading is an indispensable element in oversized items. Moreover, attractive rates of airport charges, good cooperation of a handling agent with an airport operator, facilitation of customs procedures in transit within the European Union, 24-hour availability encourage the selection of this branch of transport (Rześny-Cieplińska, Wach-Kłoskowska, 2016).

Restrictions in oversized transport are the capacity of the aircraft's hold and its capacity, an ability to deliver large-size item from/to the sender from the airport, and an ability of the airport to accept a cargo aircraft. In order to transport more loads at one time, large load aircraft were constructed, among others (Józwiak, 2010). Airbus A 300 (payload: 45 tons), Boeing 767 (payload: 60 tons), Mc Donnell MD 11 (payload 80 tons), Antonov An-124 (payload 120 tons, possible), Antonov An-225 (payload capacity 250 tons).

Transport of goods by air can also apply to hazardous materials. Strict requirements must be met in line with international and national regulations in this type of transport. Nine classes of hazardous materials can be distinguished: explosive gases, flammable solids, liquids or self-igniting, in contact with water emitting flammable gas, peroxides and organic, radioactive, toxic and infectious, corrosive and other materials not mentioned in the above.

If the consent of the participating countries in the transport of a given dangerous material is obtained, the cargo is accepted for carriage by air. The transport conditions for hazardous materials are contained in the ICAO Technical Manual and IATA DGR regulations (Kwasiborska, 2011).

3. AIR FREIGHT DOCUMENTATION

Transport documents that a carrier or a forwarder needs to prepare are all contracts and forms necessary for domestic and international transport. In air transport, the basic document is Air Waybill (AWB) (Morrell, 2011). It was introduced by the Warsaw Convention and defines the relationship between an importer and an exporter. It should be noted that AWB is not a valuable document and, therefore, it cannot be negotiated or resold. An example AWB document is presented in table 2.

Table 2. Air Waybill – egxample

Shippers name and adress CABLE AND STEEL COMPANY 1234 INDUSTRIAL STREET, NEW YORK, USA PHONE : 555 55 55		Air Waybill It is agreed that the foods described herein are accepted in apparent good order and conditio (akcept as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL					
Consignee's name and adress CABLE BIG STORE 4321 ROGERS STREET, LONDON, ENGLAND PHONE: 555 12 34		GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY ISTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper May increase such limiation of liability by de clearing a higher value for carriage and paying a supplemental charge if required.					
Issuing Carrier's Agent Name and City BOND STUFF FORWARDERS QUEEN STREET 7,LONDON, ENGLAND PHONE: 555 55 12		Accounting information NOTIFY: SOMEBODY, PH:555 55 34					
Agent's IATA Code 11-1 0000	Account No.	Reference Number			Optional Shipping Information		
Aiport of Departure (Addr, of First Carrier) and Requested Routing NEW YORK CITY		Currency USD	CHGS Code PP	X	X	Declared Value for Carriage	Declared Value for Cusoms
To LHR	By First Carrier AA	to	by	to	by	Amount of Insu- rance	
Aiport of Destination HEATHROW		Requested Flight/Date AA1234/12		INSURANCE – If Cartier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicato Mount to be insured in figures in box mared „Amount of Insurance”.			
Handling Information							
No. Of Pices RCP	Gross We- ight	kg lb	Rate Class Commo- dity Item No.	Char- geable Weigt	Rate Charge	Total	Nature and Quantity of Goods (incl. Dimensions Or Volume)
2	324	K				1234.00	SOME ITEMS
2	324.00					1234.00	
Prepaid Weight Charge Collect		Other Charges					
1234.00							
Valuation Charge							
Tax							
Total Other Chages Due Agent		Shipper certifies taht the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is property described by name and is in proper conditio for carriage by air according to the applicable Dangerous Goods Regulations.					
Total Other Charges Due Carrier	 Signature of Shipper Or his Agent					

Table 2 (cont.). Air Waybill – example

Total Prepaid 1234.00	Total Collect		
Currency Conversion Rates	CC Charges in Dest. Currency	Executed on (date) at (Place) Signature of Issuing Carrier Or its Agent	
For Carrier's Use Only at Destination	Charges at Desti- nation	Total Collect Charges	

Source: www.awbeditor.com (Access on: 25 October 2017)

The Air Waybill presented in table 1 is an evidence of the conclusion of a transport contract, the acceptance of goods in air transport. This document is standardized for each carrier. It accounts for the relationship between an importer and an exporter and determines the relationship of a sender and a recipient to the carrier. AWB is issued in English and has an individual carrier number. It is executed on three originals and a specified number of copies (Andrzejczyk, Fajfer, 2016).

Starting from the upper left corner of the document, the following fields can be distinguished: the sender below the recipient of the given cargo, carrier data, port of loading - in this case New York City, unloading port and its code (LHR – Heathrow) next to the flight number (AA1234 / 12). The longitudinal tables should show the parameters of the load, its dimensions, weight, cost, name and volume. In the upper right corner, the second table shows the terms of contract execution. At the very bottom of the consignment note the signature of the agent or the carrier and the date and place of issuing of the document should be placed.

Depending on the type of the cargo transported, transport relation, modes of transport involved, a mode of transport and a number of entities, each transport and forwarding process is diversified. In addition, to a large extent, this process depends on the scope of the transporter's or exporter's transport competence. There is no homogeneous order of performing transport and forwarding activities by entities participating in their implementation, due to the specificity of activities in the case of import and export.

In order to send a shipment, in air transport there is a specific procedure. In the export process, in the case of air freight, the procedure starts from sending the order (by the exporter) and accepting it (by the forwarder). Then the forwarder carries out the registration, assigns the order to the appropriate identification number, which appears on all documents related to the execution of the given order.

It is worth paying attention to the fact that in the first place an inquiry from the importer or exporter appears more and more often, only when the forwarding agent receives a full list of transport costs and if they are accepted, a forwarding order is given by the interested party. Upon its receipt, the forwarder analyzes the information on the document and prepares the concept of organizing the transport of a given batch of cargo.

After providing a possibility of transportation, the next action of the shipper is to prepare a shipping instruction, which must be sent to the sender of the parcel, and a copy to the ordering party. An international waybill and specimen of the freight specification should be attached to the instructions. Subsequent actions are taken by the exporter. On the basis of the forwarding instructions given by the forwarder, the goods are prepared in an appropriate

manner for dispatch. The exporter then organizes the delivery of the cargo to the designated collection point or airport.

The next step is to submit goods using the SAD form (it is used for self-declaration of goods) for customs clearance, along with the customs documents required. In the Republic of Poland, there are provisions in force, according to which declarations of goods for customs clearance may be made by entities which are participants, as exporters or importers, of commodity exchanges with foreign countries, customs agency or forwarder possessing the customs agency's authorization.

Then, the sender receives an international waybill (AWB). After sending the parcel abroad and handing over the international consignment note, the forwarder sends the exporter a transport document, which is necessary for the payment for the shipment.

The International Association of Air Carriers (IATA) launched the E-Fright platform for the better and faster service of air freight. During one year (2009-2010) its use increased 5 times. Saving costs of supply chain services through the use of the platform can reach up to 4.9 billion dollars annually. The electronic document e-AWB is one of the documents that the new platform includes. The use of the platform helps in precise tracking of the shipment, speeds up the service, reduces costs and protects the environment by eliminating the need to print documents.

In 1936 the International Chamber of Commerce developed the first version of the International Trade Rules (*Incoterms*) in Paris. These formulas are used between the parties to avoid misunderstandings when concluding transport and commercial contracts. Defining the rules was a unification of interpretation of transport and commercial contracts in order to define in a comprehensible and safe way the responsibility of each party. The last version published on 01.01.2010 was called *Incoterms 2010*.

Incoterms 2010 regulates the distribution of transport costs between a seller and a buyer and the moment of passing the risk from a seller to a buyer. In addition, it defines the division of duties, insurance and customs duties in transport. It makes it easier for the forwarder to organize properly the transport, secure any claims, determine the customs value of the goods and the clearance (Popa et. al., 2013). Incoterms 2010 contain 11 commercial formulas divided into categories: all means and modes of transport and sea and inland waterway transport. Formulas are marked with a three-letter abbreviation (first letters of names in English).

4. UNIT LOAD DEVICES AND TYPES OF SAFETY MEANS

In air transport, one can distinguish two basic types of cargo units such as air containers and pallets. A *Unit load Device* (ULD) – an air cargo unit, it can be a term for both a pallet and a container. Depending on the type of an aircraft, and a carrier, one can define the maximum gross weight. The units must be marked (Rokicki, 2016).

An air palette is a constructed aluminum plate with hooks holding the cover and safety net placed on the pallet load against moving. The air cargo containers are designed to fill the space of the hull and cargo arches as much as possible. They are made of light materials, including aluminum and plastics. The containers used in air transport must meet IATA standards. They enable not only air transport, but also a delivery of cargo to the airport via ground transport. Container types most often depend on the type of aircraft (Markusik, 2009). Designed in accordance with the IATA and ISO guidelines, the parameters are selected for the type of an aircraft.

All air cargo units, in accordance with regulations, should have ULD identification codes. The code consists of nine items. The first one consists of a letter denoting the category of an air cargo unit (Rokicki, 2016). For example, the letter "A" means a certified air container, the letter "P" – a certified flight palette, and the letter "R" – a certified thermal container. The second position of the code, also in the form of a letter, defines the basic dimensions, e.g. "A" – 224 x 318 cm, "B" – 224 x 275 cm. The third item completes the description of the unit's profile, its circumference or consistency. Another element of the ULD code is the serial number that occupies four or five positions. The last items are the airline code, e.g. "BA" – British Airways, "LH" – Deutsche Lufthansa (Sikorski, 2008).

The unique signature of the given air cargo unit can be expressed in the form "AKN 1234 KL". From the presented code, it can be read that it is an LD3 (IATA type 8) container with the number 1234, dimensions 123 x 200 x 162 cm, with a designated place for entering the forklift truck and belonging to the KLM airlines. In addition, the maximum gross weights of the container (Maximum Gross Weight - MGW) in kilograms and pounds (1 pound – 0.453 kg) as well as the current tare weight (TARE) also in two units must be given on all signatures.

When deploying air cargo, two issues are considered: the permissible surface load and the center of gravity of an aircraft. Goods placed on pallets or containers are transported on board using specialized equipment, i.e. platforms equipped with overhead cranes. Then, using the appropriate fastening belts and fasteners, the load is secured against slipping during transport. Security devices are adapted to the type of goods being transported, for example cylindrical shapes are blocked with the help of the skid.

Shock absorbers are designed to absorb kinetic energy, damping shocks and vibrations. A proper placement, protection with shock-absorbing loads and proper packaging can reduce the sensitivity of goods to the impact of mechanical energy (Kwasiborska, 2011).

The packaging of loads transported by air should be certified and marked in accordance with IATA DGR. According to *Notification to Captain* (NOTOC), the captain of an aircraft, in writing, must be informed what goods are on board, cargo compartment and route of carriage of the cargo concerned (Lasota, 2016).

5. CONCLUSIONS

Globalization facilitates an access to all products, regardless of the type and a country of origin. Developing technologies allow the purchase of any chosen product which should be transported to the buyer. There are several traditional forms of transport, but considering the delivery time, air transport is second to none. Especially, when transporting products sensitive to changes in humidity, temperature, shock, air transport is the most advantageous solution.

Transport cargo management is an important element contributing to the economic development of the region and the country. Taking into account the production zones, the supply of Just in Time production elements, air transport is an opportunity to choose a reliable means of transport, with the fastest possible transport time and an ability to control transport conditions.

With the economic development, the number of cargo transportations at airports is growing. Every year, there is a several percent increase in the use of this mode of transport. It also depends on the development of technical infrastructure. By air, there are transported

that constitute 1% of all international trade, while 35% takes into account the value of transported cargo, which means light, but valuable goods.

The basic document proving the conclusion of the contract between the importer and the export used in the air freight forwarding is *Air Way Bill*. In order to unify the interpretation of concluded transport and commercial contracts, the International Trade Rules for *Incoterms 2010* were developed. They regulate the division of transport costs, the moment of transfer of risk between a buyer and a seller, as well as insurance and customs issues. Two basic types of loading units are used for transport, such as a container and an aviation pallet. They also enable a delivery of cargo to the airport. Containers are designed in accordance with the requirements of ISO and IATA standards, while the exact parameters depend on the type of an aircraft.

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The highest level of social responsibility is ensured by an active attitude which means that an organization perceives itself as a citizen in society and actively looks for opportunities to contribute to the social good (Hąbek, 2010).

RESPONSIBILITY AS A DETERMINANT OF THE ACTIVITY OF CONTEMPORARY ENTREPRENEURS

The article shows selected results of empirical research. The state of knowledge on CSR in society among business faculty students in Podkarpacie was presented on its base. The aim of the research was to learn about the attitudes and opinions of young, potential managers (graduating from this field) about their awareness of CSR activities in Poland.

CSR is a current theme which is widely discussed in the area of management. The salience of this concept may be demonstrated by the fact that it is taken into account in the development of business models of modern enterprises.

The first part of the article presents the theoretical foundations for the principles of corporate social responsibility. It addresses the question of the essence of corporate social responsibility. CSR was described as the art of managing modern enterprises, which put a considerable emphasis on this aspect, since they are aware of the role of establishing relationships with stakeholders. Stakeholders are a key concept when it comes to undertaking business activities in the area of corporate social responsibility.

The second part of the study presents the results of the research carried out among final-year students from the Faculty of Management at the Rzeszów University of Technology.

CSR is a challenging path, but it may bring long-lasting benefits. It changes business paradigms, rediscovering and emphasizing the importance of relationships between the organisation and its surroundings. It is a modern model of managing an organization that facilitates its operation on a competitive market and simultaneously increases the company's innovativeness.

The principles of CSR are simple: honesty, reliability, sensitivity, loyalty, righteousness. These values cannot be purchased, it takes years to develop them, and they are becoming a valuable resource in the modern economy.

Keywords: CSR, relationship management, company stakeholders, responsibility.

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1. INTRODUCTION

Over the centuries, views related to the functions that enterprises should perform have changed. In terms of the classic approach, the company's priority should be to maximize profit. However, with time, these issues started to be perceived somewhat differently. Attempts were made to encourage economic entities to not only achieve its business goals but also to contribute to the growth of social wealth. Attempts were made to involve enterprises in social issues in the field of corporate social responsibility (CSR).

The CSR concept was created in the 1960s in the United States. The growing competitive advantage of the USA meant that this concept began to attract a broad group of supporters in Europe as well. The process of globalization, visible in every sphere of economic life, was also of great importance for the interest CSR.

The modern and simultaneously responsible business is constantly looking for synergy between economic, social and environmental aspects. Large, international corporations are doing a lot to be perceived as responsible. They want to be well-perceived both by their consumers, as well as by non-governmental organizations. CSR is not applicable solely to large companies. Small and medium-sized enterprises that play an important role in the development of local communities and are not always aware of their CSR potential are also increasingly observable.

In Poland, during the transformation period, an argument was often used that the economy is not fully mature for it to be able to take into account social and environmental issues, and companies are forced to fight for survival in the market.

Corporate social responsibility has been seen in a rather peculiar way in Poland thus far. Usually social responsibility has been discussed in the context of financial donations supporting a good cause or social campaign. These discussions were accompanied by assurances regarding the selflessness of these actions. But after all the management theory defines corporate social responsibility as a modern instrument to build the company's value and leverage. This kind of charity actions could be, at most, a form of redistribution of elaborated profits (Rok, 2012).

However, the relatively high economic growth observed in recent years and the current economic crisis should encourage enterprises to change their management model to a more responsible one. These are the activities in which a business should seek its competitive advantage in the market.

2. THE ESSENCE OF CORPORATE SOCIAL RESPONSIBILITY

The concept of corporate social responsibility is a broad and complex issue. A clear definition of the scope and type of socially responsible activities cannot be offered. A lot in this respect depends on the local culture, the industry in which the company operates, but also on the development of the country and the growth of social awareness. Some theoreticians pay attention to the voluntary nature of the company's activities, for others, it is important to build positive relationships with stakeholders. The moment when the company should make the decision to conduct activities for the benefit of the society is also an important issue. Should it be done at the very beginning of its business activity or only when it has achieved a suitable position on the market and has guaranteed adequate profits.

A new moral contract between society and corporate organisations is based on linking corporate economic success with social and economic development which is enhancing

social welfare. Therefore, corporations should be creating values instead of only picking them up (Paliwoda-Matiolańska, 2014).

The most comprehensive view is presented in Gasparski's definition, according to whom, a responsible business should increase the company's value over a longer period of time, ensure proper relationships with the company's stakeholders, and should oblige to act in accordance with the law and socially established ethical standards (Rok, 2008).

While analysing the concept of social responsibility it is worth to point on the broad range of responsible actions which corporations may take. R. Spearman has extracted five main areas of corporate social responsibility (Grudzewski, Hejduk, Sankowska, Wańtuchowicz, 2009):

- 1) elimination or weakening of conflicts of interests resulting from the diastase of objective and subjective goals;
- 2) securing the workers' satisfaction with the results of their work;
- 3) caring for the wellbeing of the own society;
- 4) protection of the environment from destruction and leaving it to future generation in a state that allows humans to continue living worthily;
- 5) caring for the wellbeing of humanity.

An important document detailing CSR was the Davos Manifesto, which stated that management should serve clients as well as co-workers, investors and the whole society, but also balance the different interests of these groups (Rojek-Nowosielska, 2006).

One of the first scientists to pay attention to different types of organizational responsibility was Archie Carroll. He called this distinction the pyramid of corporate social responsibility.

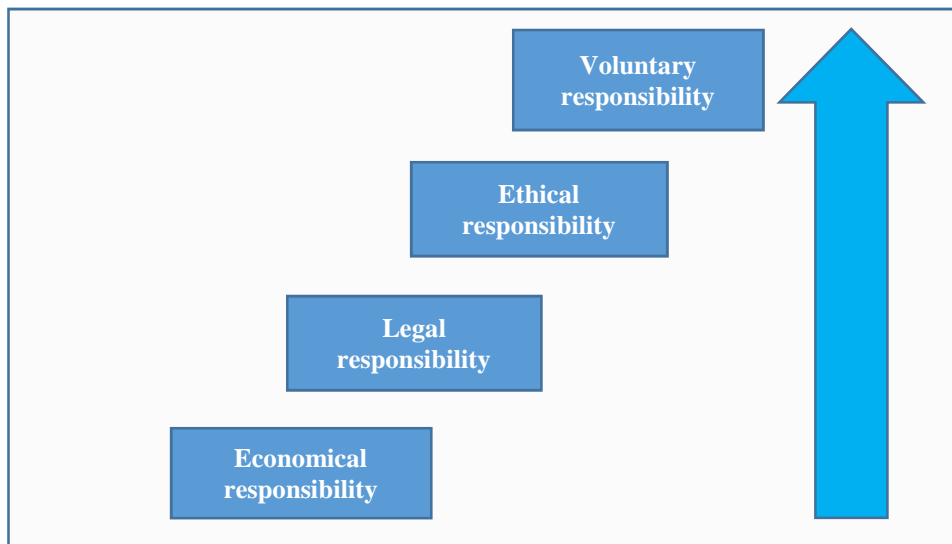


Fig. 1. Pyramid of Corporate Social Responsibility

Source: www.csr.szczecin.pl/baza-wiedzy/czym-jest-csr.

- The company's economic responsibility refers to the return on the investment that the owners have made.
- An important element of obtaining economic benefits is the legal responsibility and the obligation to act within its boundaries.
- The company has a duty to act in accordance with the ethical standards adopted in society.
- Companies have a discretionary responsibility, exhibiting behaviours that can help both the company and the public (www.csr.szczecin.pl/baza-wiedzy/czych-jest-csr).

Corporate social responsibility is described in various ways. This issue is discussed by many different scientific disciplines and each of them offers a different perspective and new conclusions related to social responsibility.

All the definitions of CSR, irrespective of their origin, agree on several aspects:

- compliance with stricter requirements than those contained in legal regulations;
- taking into account the business objectives of the company;
- taking into account the interests of the environment in its activities.

The idea of corporate social responsibility is subject to constant evolution. However, it might be said that it is based on the fact that a company strives to achieve its goals, taking into account the expectations of its employees, customers, local communities, etc.

3. CSR AS THE ART OF MANAGEMENT

One can speak about the modern understanding of CSR from 1953, when H.R. Bowen introduced the term “social responsibility”. At that time, and for a long time later, it was thought that social responsibility is an attribute of the entrepreneur, and not as it is nowadays – of the organization.

Davis claims that social responsibility grows from the society’s strength and corporations should work like a bidirectional open system aimed at signals from society’s site and openly, publically revealing its work (Roszkowska, 2011).

Adamczyk (2009) claims among other things: “Corporate social responsibility might be interpreted as a commitment to act transparently and ethically in accordance with sustainable growth and the pursuance of social wealth considering the stakeholders’ expectations, but in accordance with the law and norms of acting”.

The results of scientific research clearly indicate that CSR is of key importance for the company's stability over a long period of time. Business ethics and the implementation of CSR principles in a comprehensive manner in all areas of the company is an important element in building its sustainable value and advantage in the market.

The benefits of implementing corporate responsibility strategies should be considered in the long term. These are the following (www.csr.szczecin.pl/baza-wiedzy/czych-jest-csr):

- Influencing the loyalty of consumers and stakeholders;
- Correct relationships with the community and local authorities;
- Influencing the level of organizational culture;
- creating a positive image of the company;
- Securing the best employees;
- An increase in the company's competitiveness;
- An increase in the interest of contractors and investors;

- Employees' interest in taking up employment with a socially responsible employer;
- An improvement in the company's reputation and image;
- Development of the company;
- An increase in pro-ecological activities.

One of the basic principles of effective company management is shaping long-term relationships based on cooperation. Each company enters into various types of relationships with various organizations and individuals. Social responsibility management is a form of seeking a balance between its effectiveness and profitability and a broadly understood social interest.

It might be said that corporate responsibility is an effective management strategy which, when conducting a social dialogue at the local level, increases the competitiveness of companies in the global area, while at the same time shaping good conditions for economic and social development (gap.uek.krakow.pl/images/dokumenty_sympozyu/odpbiz.pdf.) Such activities should benefit everyone.

4. MANAGING RELATIONSHIPS WITH STAKEHOLDERS

The contemporary reality of business operations is becoming more and more complex. Good relationships with customers are not enough to be competitive. In order to survive in today's market, a company has to establish relationships with a wide range of stakeholders. Therefore, companies which are aware of the role of such relationships considerable emphasis on building proper relationships with broadly understood stakeholders, because they see the benefits that result from proper management of these relations.

Each company, as well as various institutions (e.g. public administration units, non-governmental organizations, etc.), have their stakeholders because none of them operates in a vacuum and is always either influenced by or influences other entities.

In case a corporation undertakes socially responsible actions the corporation, being a collection of a certain people, undertakes the realisation of a specific vision and afterwards the motivation arises to act on certain goals and specific tasks assigned to both internal and external stakeholders (Bartkowiak, 2011).

Stakeholders are a key concept when taking actions in the field of corporate social responsibility. The European Commission defines CSR as "the responsibility of enterprises for their impact on society" and postulates that "enterprises should have in place a process to integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders (<http://odpowiedzialnybiznes.pl/hasla-encyklopedii/interesariusze/>).

The classification of stakeholders can take place according to various criteria (e.g. due to the degree of relevance to the company, the strength of impact or the nature of the relationship, etc.) The basic division concerns internal and external stakeholders.

Internal stakeholders may include (<http://odpowiedzialnybiznes.pl/hasla-encyklopedii/interesariusze/>):

- employees;
- shareholders;
- Supervisory Boards.

External stakeholders may include (<http://odpowiedzialnybiznes.pl/hasla-encyklopedii/interesariusze/>):

- customers;

- suppliers;
- competitors;
- state authorities;
- the media;
- trade unions;
- non-governmental organisations;

The issue of stakeholders is very important for corporate social responsibility because it draws attention to both the interest of the owners as well as the broader social interest, whose inclusion affects the sustainable development of the organisation.

Skillful management of relationships with stakeholders may contribute to benefiting the company. The first stage of managing these relations should be their correct identification. This may be achieved by assigning one of two values to all the company's stakeholders:

- Stakeholders who have a large or small influence on the company;
- Stakeholders who are interested or uninterested in the company's activities.

Table 1. Relationship management model

Planning	
Preliminary stage	Executive stage
- reflection on the role of relationships; - analysis of the company's potential; - possibilities of adapting the concept	- internal and inter-organizational arrangements; - conditions for the activation of relationships; - evaluation
2. ORGANIZING	
Preliminary stage	Executive stage
- selection of entities and forms of cooperation; - establishing cooperation; - designing information and decision-making systems	- coordination in the area of processes, structures and strategies; - solidifying cooperation; - evaluation
3. MOTIVATION	
Preliminary stage	Executive stage
- development of an incentive system; - identification of incentives	- exchange of information and experiences; - a system of relationship values and norms; - implementation of the incentive system; - evaluation
4. CONTROLLING	
Preliminary stage	Executive stage
- expected condition of a relationship; - evaluation indicators; - monitoring; - possible event scenarios;	- ongoing assessment of relationship conditions; - analysis of variations; - perfecting solutions; - evaluation

Source: study based on (Danielak, 2012).

Identifying and classifying stakeholders in terms of impact and interest allows one to take appropriate actions. Precise identification of key stakeholders is important in order to

effectively involve them in the company's operations. Four basic forms of engaging stakeholders may be distinguished as (<http://odpowiedzialnybiznes.pl/artykuly/zarzadzanie-relacje-z-interesariuszami-jako-jeden-z-elementow-spoecznej-odpowiedzialnosci-biznesu/>):

- Communication;
- Consulting sessions;
- Partnerships;
- Dialogue.

The management of relationships with stakeholders is a complicated and complex process that requires various activities with regard to planning, organizing, motivating or controlling (tab. 1).

The activities presented in Table 3 are coupled together. Valuable relationships allow the company's stakeholders to obtain a satisfactory added value.

5. RESULTS OF CONDUCTED STUDIES

The aim of the research was to learn about the attitudes and opinions of young, potential managers (graduating from this field) about their awareness of CSR activities in Poland. How are CSR activities understood and what are their benefits? Do people pay attention whether a company is socially responsible while making purchasing decisions? Is government and society trying to move the costs of social problems costs into the business area?

The research, whose results are presented in this study was carried out at the turn of March and April 2018 among the students of the Rzeszów University of Technology in the field of Management and specialization of a professional manager. 60 students who were completing the last semester of part-time studies were examined – 36 women and 24 men. 16 people living in the countryside, 32 in the city with less than 100,000 inhabitants and 12 people in a city with more than 100,000 inhabitants. All respondents live in Podkarpackie Voivodeship.

Table 2. Respondents' gender and place of residence

WOMEN		MEN		City over 100,000 inhabitants		City of up to 100,000 inhabitants		Countryside	
N	%	N	%	N	%	N	%	N	%
36	60	24	40	12	20	32	53	16	27

Source: own research.

For the most part, they were young people who are in the process of looking for or changing their job, as well as those who have recently taken up work. The method used to carry out the research was the method of a diagnostic survey, which allows to gather personal opinions on the analysed issue. The applied research technique consisted of a questionnaire form completed by the students. As many as 80% of the surveyed students described themselves as responsible consumers. This manifests itself primarily in making thoughtful purchases like purchasing only necessary products. It is worth noting that slightly more than 6% of the respondents who had found themselves to be responsible consumers admitted buying products from companies acting ethically.

Selected research results are presented on charts.

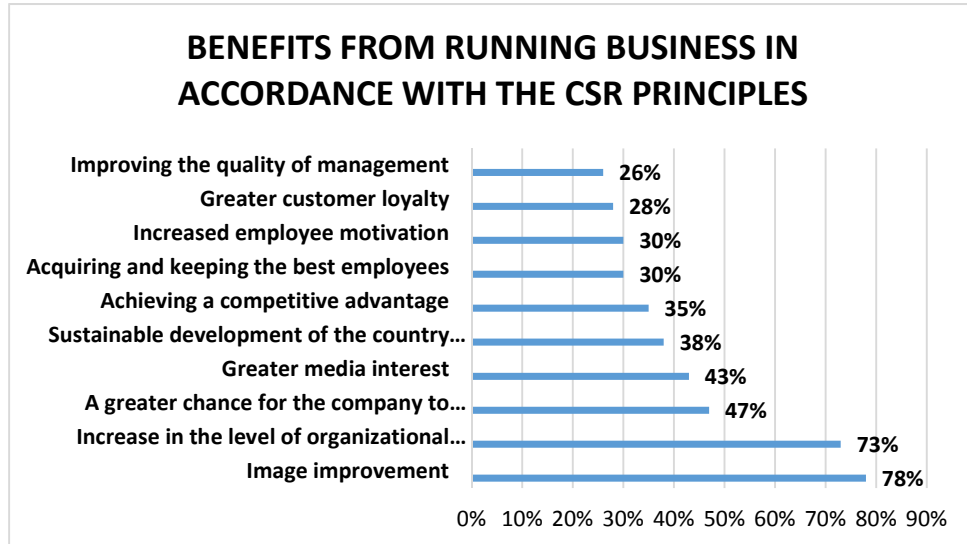


Chart 1. Benefits from running business in accordance with the CSR principles

Source: own research.

Chart 1 illustrates the benefits of carrying out activities in line with the principles of corporate social responsibility. The largest percentage of respondents indicated an improvement in the organization's image (78%) and an increase in the level of organizational culture (73%). The following benefits were indicated to an average degree: a greater chance for the company to stay on the market (47%), greater media interest (43%), balanced development of the country and the region (38%) and achievement of a competitive advantage (35%). The remaining indicated benefits were also highly rated among the respondents: attracting and retaining the best employees, as well as increasing their motivation (30%), greater customer loyalty (28%) and improvement in the quality of management (26%). It might be said that respondents see very large benefits resulting from activities based on the principles of corporate social responsibility. The results of the survey confirmed the conclusions from the discussion which state that generating the company's economic value by means of generating its social value constitutes a mutual benefit for both the company and the society.

As shown by the studies, people entering the labour market pay most attention to the media image of the company (78%), the issue of cooperating with social organizations (72%) is also important to them. Another factor they attach importance to is whether the organisation participates in pro-environmental campaigns (57%) and supports for local initiatives (45%). A quarter of respondents also pointed to some other aspects that are important for new employees.

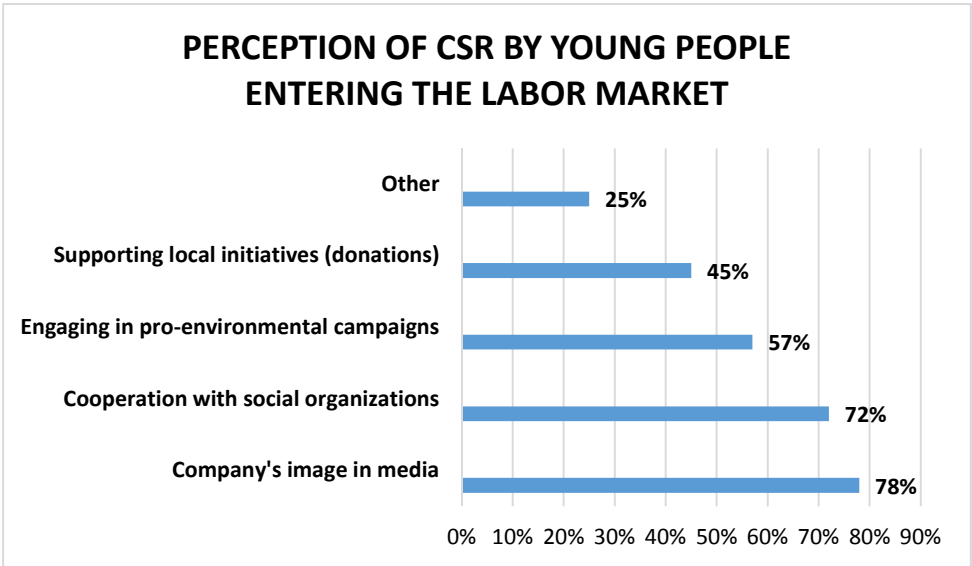


Chart 2. Perception of CSR by young people entering the labor market
Source: own research.

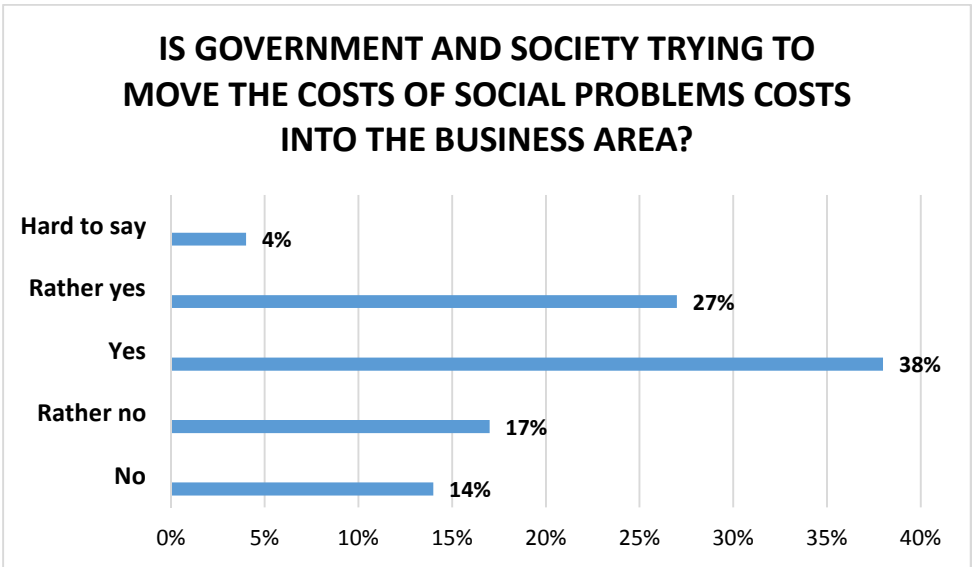


Chart 3. Is government and society trying to move the costs of social problems costs into the business area?
Source: own research.

The image of companies translates into the attitude towards the products and services offered by a given company. It may be concluded that enterprises which aim to meet market requirements must take into account the issues of corporate social responsibility in their activities. Nowadays, CSR is not merely a matter of choice, it is a necessity.

It is difficult for the respondents to give a definitive opinion on the fact that the government and society are making companies bear the costs of solving social problems (chart 3). Despite the fact that the answers "yes" (38%) and "rather yes" (27%) clearly predominate, there is also a significant number of respondents who disagree with this statement (rather no –17% and no – 14%). Additionally, some of the respondents were not able to take a stand on the analysed issue (4%).

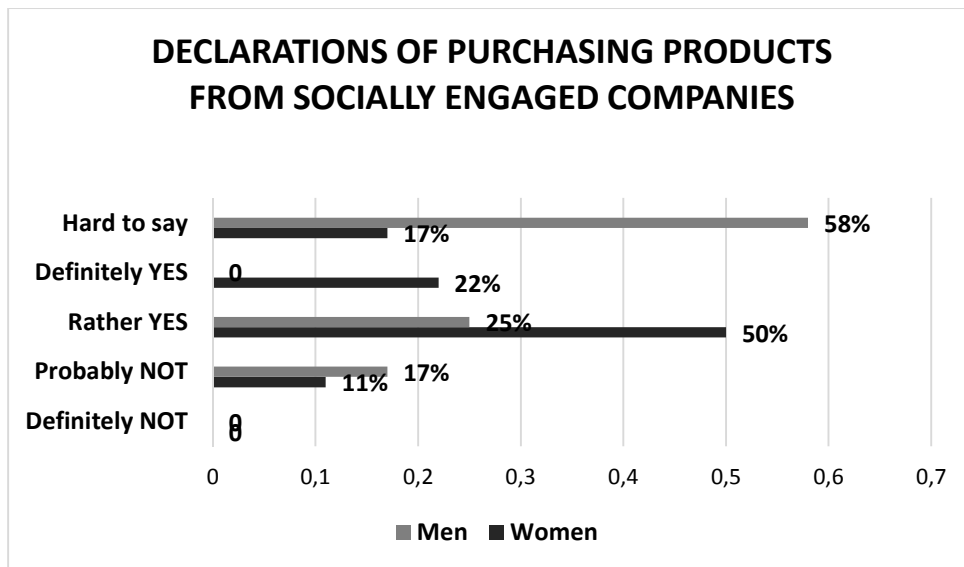


Chart 4. Declarations of purchasing products from socially engaged companies

Source: own research.

Respondents were asked how corporate social engagement affects their perception of companies, as well as their interest in the product of a given company and possible purchases. The variable was the respondents' gender. As much as 58% of men and 17% of women expressed their indecision in regards to a purchase declaration of a product from a socially engaged company. 50% of women and 25% of men were rather decided and 22% of women were determined to buy products from socially engaged companies while there was no such declaration among men. The answer 'rather not' was indicated by 17% of men and 11% of women. None of the respondents indicated the answer 'definitely not' in the examined question. On this basis, it can be concluded that women pay far more attention to companies that are socially involved and declare more often the purchase products from these companies. This result looks optimistic, although it must be remembered that this is only a declaration and in a real purchase situation this factor might have lower significance.

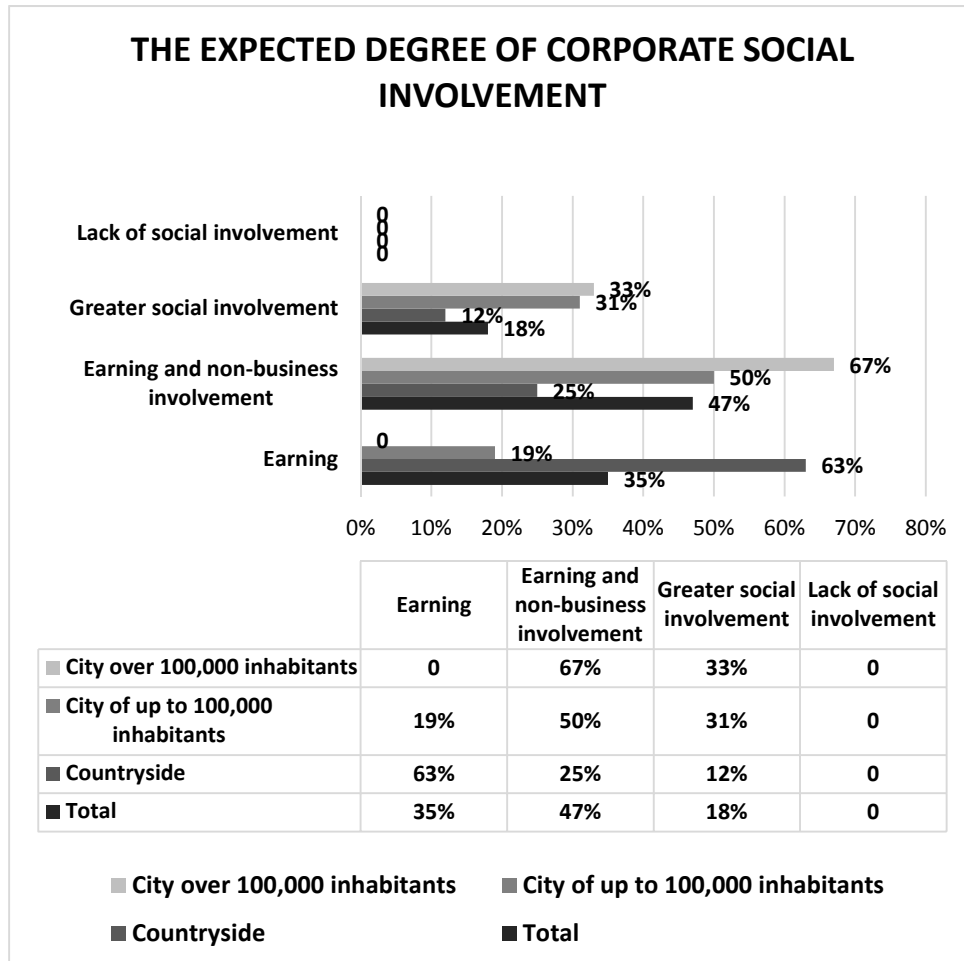


Chart 5. To what extent do the respondents expect social involvement from corporations?
 Source: own research.

The respondents expect social involvement from companies. Upon request to indicate one main purpose of the existence of companies (out of 4 goals differing in the degree of social involvement), the majority of residents of cities with more than 100,000 inhabitants indicated that the goal of companies and enterprises should be earning money and non-commercial involvement at the same time (67%). 63% of countryside residents believe that the goal of companies is earning money. None of the respondents expects any kind of involvement, and 47% of all respondents believe that earning money should be accompanied by some involvement in non-commercial activities. The rest, more than 30% of urban residents, and 18% of all respondents expect explicitly bigger engagement for society from corporations – active support of various types of activities and initiating them (not only responding to the demands of the environment).

6. CONCLUSIONS

The concept of corporate social responsibility, which has recently gained popularity, is a voluntary decision, which means that there is no obligation on enterprises to carry out activities in this field. However, the current market conditions force them to look for new ways to gain a competitive advantage and thus increase the company's value.

Providing support for local communities, environmental protection, ethical code, proper care of the professional and personal development of employees – these ought to be the main activities within the boundaries of CSR. Despite the fact that such activities can be undertaken by all companies, the companies that do undertake them are mainly the large ones.

According to a report by a consulting company called KPMG, as well as Forum Odpowiedzialnego Biznesu, 96 per cent of companies in Poland are aware that the duty to undertake CSR activities lies on enterprises, however, only 46 per cent of them actually complies with it. Meanwhile, over 70 per cent of Poles are still not familiar with the concept of CSR.

To survive in the current market, a company should establish relationships with a wide array of stakeholders. Ignoring their voice in the process of designing and implementing activities within the area of social responsibility may result in the inadequate identification of social needs, inappropriate tools to respond to them, or lower efficiency. Therefore, it is worth to identify key stakeholders and establish a dialogue with them in order to take advantage of the potential benefits for the company and its social environment, which lies in a properly implemented strategy of corporate social responsibility.

Statistical data and customer behaviour surveys clearly demonstrate that characteristics related to Corporate Social Responsibility are becoming significant. The conclusion is obvious – companies which aim to meet market expectations will need to take into account the issues of corporate social responsibility while planning their strategies. Nowadays, CSR is not merely a matter of choice, but a necessity. The notion of responsible business has entered the language of the media, has become the object of public interest and, above all, has become a comprehensive concept of managing enterprises and for these reasons it cannot be ignored.

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Bogdan MRÓZ¹

**OVERVIEW OF THE BOOK COMPLIANCE
IN MULTINATIONAL CORPORATIONS. BUSINESS
RISKS IN BRIBERY, MONEY LAUNDERING,
TERRORISM FINANCING AND SANCTIONS,
BY FABIAN M. TEICHMANN AND BRUNO S. SERGI,
EMERALD PUBLISHING, 2018**

Over the past two decades, the enforcement of anti-bribery, anti-money-laundering and anti-terrorism-financing regulations has become increasingly challenging for multinational corporations. Bribery and money laundering scandals have the potential to take down entire multinational corporations. Frequently, managers in charge of those firms end up facing criminal prosecution and civil lawsuits, and are not equipped with the formal legal training to prevent these phenomena.

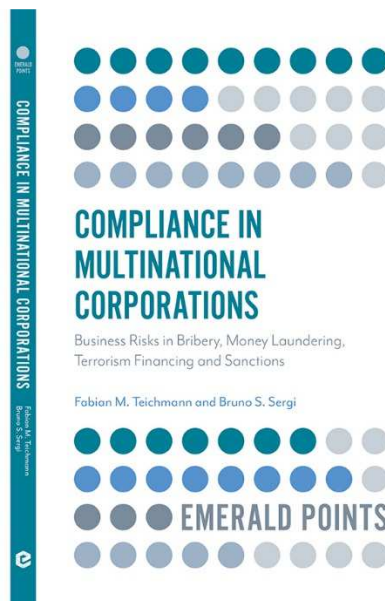
Compliance in Multinational Corporations explores the historical background of such phenomena as bribery, money laundering, and terrorism financing. Analysing the legal environment based upon international conventions, and including an empirical analysis of 100 expert interviews, it takes an innovative look at the perspectives of both criminals and compliance experts to provide a long-lasting guide for compliance experts. While traditional compliance and financial crime literature focuses on rules, regulations and prevention mechanisms, this book shows how intelligent criminals act. It offers practical advice and concrete guidelines that will address the most pre-eminent compliance challenges.

The book will prove an essential resource for compliance managers, academics and professional educators who wish to equip themselves against the significant risks they face.



Fabian M. Teichmann is an attorney-at-law and public notary and chairs the board of Teichmann International AG. He holds a PhD in Law from the University of Zurich, Switzerland, and he is a Doctor of Economics and Social Sciences from the University of Kassel, Germany.

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Bribery, money laundering and terrorism financing have become hotly debated issues in the recent years implying serious political and business risks especially for multinational corporations operating on the global marketplace. In this context, the choice of the subject matter for the reviewed monograph („Compliance in multinational corporations. Business risks in bribery, money laundering, terrorism financing and sanctions”), should be commended as timely, highly relevant and topical.

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The book has been divided into six chapters. Chapter 1 entitled “Bribery and Corruption Today: Practices and Challenges” addresses very important issues related to the costs of corruption, legal environment (including the OECD Anti-bribery convention), and compliance mechanisms. The authors discuss contemporary corruption methods focusing on risks and implications for the corporations and finally, in the last section, present solutions aiming at eliminating, or at least mitigating, the negative impacts of bribery and corruption on the corporate performance and business ethics.

Chapter two (“Money Laundering: Challenges and Solutions”) touches upon one of the pivotal challenges facing regulators, politicians and business community in the 21st century. Sergi and Teichmann in a highly professional manner present in detail different money laundering methods and techniques characterising *inter alia* the possibilities offered to the money launderers by the banking system, the markets for antiquities and real estate as well as the use of consulting firms, offshore vehicles, casinos, luxury goods, false invoices etc. In the final section of the chapter useful tips and recommendations for financial regulators, institutions and compliance officers have been provided.

Chapter three entitled “How Multinational Corporations Become Trapped in Terrorism Financing” focuses on very intriguing and important issues related to the involvement of big global corporations in financing of terrorist activities. Sergi and Teichmann point out that terrorists rely on a broad variety of both legal (e.g. proceeds of stock market investments, salaries for labour etc.) and illegal funding sources (smuggling, fraud, theft, drug trafficking, kidnapping, robbery and money laundering).

The authors’ conclusions are based on topic-related literature review but also on their own empirical research (informal interviews with 15 presumed illegal financial services providers and quantitative survey of 181 compliance officers). Informal interviews and questionnaire research provided an in-depth insight into mechanisms and sources of terrorism financing. One of the major conclusions is that there is a growing trend towards technical solutions (e.g. transferring assets through cryptocurrencies); terrorism financiers tend also to use money transfers and mobile payments services. Terrorists use strawmen who claim to be the beneficial owners of the assets being transferred. Another important conclusion is that terrorists tend to use non-regulated sectors. In this context hawala banking system plays an important role in financing terrorism mostly due to the fact that it does not impose strict compliance measures used by regular banks.

The authors rightly emphasize that the current mechanisms to fight terrorism financing rely heavily on private enterprises. Particularly important is the role of banks which carry out transaction analysis and carefully monitor for clients matching the profiles of foreign terrorist fighters provided by financial intelligence units. They identify beneficial owners, freeze assets and report suspicious activities to the competent authorities. Fighting terrorism requires international collaboration. The FATF (Financial Action Task Force) seems to be the most relevant international organisation focused on combatting financial fraud and improving respective legislation around the globe.

Chapter four (“Sanctions and Embargos: Effective Political Tools or Unnecessary Challenges to Compliance Departments?”) highlights very important policy-mix dilemma related to combatting bribery, money laundering and terrorism financing. Are sanctions and embargos an effective tool or rather counterproductive repressive measure (especially in the long run)? The authors take a clear-cut stance in this contentious issue stating in the conclusion section that sanctions and embargos can be easily circumvented. Affected indi-

viduals can make use of different techniques used by money launderers and terrorism financiers to avoid detection (e.g. offshore bank accounts, strawmen, consulting firms, cash deposit boxes etc.).

In chapter five (“Whistle-Blowing in Corporations”) the authors make an attempt to identify factors determining whistle-blowers’ behaviour (e.g. personality traits, moral views, demographic characteristics, job situation, intolerance of ambiguity, levels of self-esteem etc.). Sergi and Teichmann point out that cultural factors may play an important role too, ascertaining that whistle-blowing could be a more effective control mechanism for example in Australia than in India or China. Cultural differences should be taken into account when designing whistle-blowing systems. The authors characterise also obstacles to whistle-blowing and incentives which could encourage whistle-blowers to report corporate misbehaviour and malpractices. One should agree with their observation that multinational corporations usually face an ethical dilemma: they must protect both the whistle-blower and the alleged wrongdoer. On the one hand whistle-blowers should not be discouraged from reporting unethical behaviour or undesirable actions, on the other – the corporation cannot take repressive measures against the wrongdoer without thoroughly investigating the case. In the last section of the chapter the authors propose possible solutions to overcome obstacles to whistle-blowing as well as its risks and implications for corporations and managers.

The last chapter contains major conclusions and practical implications for compliance officers and corporate managers based on findings of the authors’ own empirical research. Sergi and Teichmann conclude that whistle-blowing should be rewarded. By introducing schemes based on material rewards senior management of the corporation sends a clear message to employees that whistle-blowing is desired and supported. However, corporate CEOs should establish a reasonable policy to avoid an excessive number of minor reports; for instance bonuses should not be paid for reporting small incidents of bribery. This could undermine trust among employees thus endangering overall corporate performance.

The book edited by Fabian M. Teichmann and Bruno S. Sergi is well embedded in international literature on corruption, money laundering and terrorist financing. Apart from this, the authors conducted their own empirical research which provided intellectual value added to the monograph under review.

Summing up, I would highly recommend the book edited by Fabian M. Teichmann and Bruno S. Sergi to all scholars as well as managers and business people interested in compliance in multinational corporations.

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