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From the Editorial Committee

We are giving you the next 22nd (4/2015) 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

Małgorzata BARAN¹
Justyna STECKO²

SIMULATION MODEL OF LABOUR FORCE FOR THE MANUFACTURING COMPANY BASED ON SYSTEM DYNAMICS

The article presents the methodology of constructing a simulation model of the labour force for a manufacturing company based on the System Dynamics method. The research presented in the article was conducted in three manufacturing companies in Poland. Initially, the key mental model variables of the labour force system were defined. The process of defining the variables was supported by the management as well as by the people directly linked to the labour force management in the manufacturing companies researched. The next step was to combine the variables into a cause - effect diagram, which reflected direct and indirect relationships between particular variables and which allowed to discover some sorts of feedback loops in the system. Next, the cause-effect diagram was converted into a simulation model. To that aim the simulation software, Vensim® was used. After that, validation of the simulation model was conducted using the following methods: assessing the correctness of the boundary of modelling, adequacy of the model structure and adopted values (constants) compared with available knowledge about the modelled system, testing the accuracy and consistency of the units of variables adopted in the model and testing the model behaviour in extreme conditions. The conducted tests confirmed the correctness of the constructed model. Finally, simulation of the model was conducted for the manufacturing companies researched, the results obtained were discussed and final conclusions were formulated. The article finishes with general indications of the direction of the usage of the simulation model presented.

Keywords: simulation modelling, system dynamics, labour force, manufacturing company.

1. INTRODUCTION

A manufacturing company is a system comprised of a number of minor subsystems. These subsystems include, among others, production, labour force, warehouse management, market, targets and values subsystem, etc. Each subsystem interacts with another subsystem striving for a certain balance determined by the goals of a given manufacturing company. Although these subsystems are highly complex, often times very difficult to grasp by means of human thought models, there are methods which enable one to generally depict processes taking place in these subsystems. One such method is Systems Dynamics. This method allows one to construct simulation models of any selected system as well as particular subsystems. The constructed models present processes taking place in

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systems both from a quantitative angle as well as from the perspective of the dynamics of their behaviour in time³.

The purpose of this article is to present the steps of modelling of the labour force system for the manufacturing company. The investigations that were used to construct the model, were conducted in three manufacturing companies in Poland. The study included observations of subsequent actions determining the appropriate level of employment, in-depth interviews with the management of the companies and the study of their source materials. Therefore, the model was based on empirical research.

2. LITERATURE REVIEW

Systems dynamics is often used for modelling complex economic systems such as manufacturing companies, in which numerous non-linear relations occur. The very human aspect as a single system, however, hardly ever takes place. The majority of models contain the human aspect as one of the subsystems of bigger systems among other subsystems, for instance production, warehouse management, orders, the market, profits, costs, etc.⁴.

One of the most interesting models devoted to labour force is the model introduced by Sterman⁵ and connected to manufacturing supply chain. The accumulation variables in the model are: "Vacancies" and "Labour." The flow variables are: "Vacancy Creation Rate", "Vacancy Closure Rate", "Hiring Rate" and "Quitting Rate". Among the information variables (or the auxiliary variables) there are, among others: "Desired Vacancy Creation Rate", "Adjustment for Vacancies", "Desired Hiring Rate", "Adjustment for Labour" and "Expected Attrition Rate". The exogenous variable is "Desired Labour". One is able to observe the behaviour of the particular variables of the model in time in response to the various changes of the exogenous variable.

Another interesting model is the model of adjusting employment level to a company's demand introduced by Krupa⁶. The accumulation variables in the model are: "Store" and "Labour". The flow variables are: "Production", "Sale" and "Hiring Rate". There are 8 information variables in the model, among which there are: "Average productivity", "Desired Labour" and "Desired Production". The main objective of the model is to determine the adequate amount of production staff, which undergoes constant changes due to the changes in demand. The model makes it possible to conduct a variety of tests, for

³ See more in: J. Forrester, *Industrial Dynamics*, MIT Press, Cambridge MA 1961; J. Forrester, *Urban Dynamics*, MIT Press, Cambridge MA 1969; J. Forrester, *World Dynamics*, MIT Press, Productivity Press, 1973; B. Wąsik., *Elementy dynamiki systemowej dla ekonomistów*, Wydawnictwo Akademii Ekonomicznej, Kraków 1983; K.R. Śliwa, *O organizacjach inteligentnych i rozwiązywaniu złożonych problemów zarządzania nimi*, Oficyna Wydawnicza WSM SIG, Warszawa 2001; E. Kasperska, *Dynamika systemowa. Symulacja i optymalizacja*, Wydawnictwo Politechniki Śląskiej, Gliwice 2005; P.M. Senge, *Piąta dyscyplina. Teoria i praktyka organizacji uczących się*, Wolters Kluwer Polska, Kraków 2006; *Elementy Dynamiki Systemów*, red. J. Tarajkowski, Wydawnictwo Akademii Ekonomicznej, Poznań 2008.

⁴ R. Łukaszewicz, *Dynamika systemów zarządzania*, PWN, Warszawa 1975; Z. Souček, *Modelowanie i projektowanie systemów gospodarczych*, Wydawnictwo Naukowe PWN, Warszawa 1979; A. Piekarczyk, K. Zimniewicz, *Myślenie sieciowe w teorii i praktyce*, PWE, Warszawa 2010.

⁵ J. Sterman, *Business Dynamics: Systems Thinking and Modeling for a Complex World*, Irwin McGraw-Hill, Boston 2000, pp. 757-764.

⁶ K. Krupa, *Modelowanie, symulacja i prognozowanie. Systemy ciągłe*, Wydawnictwa Naukowo – Techniczne, Warszawa 2008, pp. 92-99.

instance to observe the change in the behaviour of particular variables in response to the change in the "Labour Adjustment Time" variable.

One more model has been introduced by Baran⁷. The model consists of two connected sub models. The task of one of these models is to plan employment in response to the taken orders, while the task of the other one is to present the actual exploitation of the hired labour in particular production processes. The accumulation variables in the model are: "Labour", "Production Labour" and "Finished Stock". The flow variables are: "Desired Hiring Rate", "Labour for Production", "Unexploited Labour", "Production" and "Sale". Among the information variables there are, among others: "Orders", "Demand for Labour", "Average productivity". The model not only serves to determine the number of workers, but also indicates excess employment and shortage of workers. It also allows to conduct tests of the influence of the variables from particular sub models on each other.

3. ANALYSIS AND STUDY

The research that was used to construct the model, was conducted in three manufacturing companies in Poland. The study included observations of subsequent actions determining the appropriate level of employment, in-depth interviews with the management of the companies and the study of their source materials. Therefore, the model was based on empirical research.

Profiles of the companies are as follows. Najlepszfoto.pl. was the first company. The company is a medium-sized manufacturing company. It makes products associated with photography, for example photo albums, photo books or photo calendars. The company has operated in the photo market for over a dozen years. It cooperates, among others, with Kodak corporation. The study focused on determining the size of the labour force for production of photo books. The production takes place according to specific orders only. The research in Najlepszfoto.pl was carried out between the second half of September 2009 and the second half of October 2010. It lasted for 56 weeks.

The research was also conducted in Zelgraf company. It represents the sector of small enterprises. The company has been in operation since 1996. It produces professional silicone dies and steel dies for printing, used for decorative glass and plastics marking. The study was focused on determining the size of the workforce for manufacturing silicone stamps (or silicone dies), which make it possible to mark a product on any surface and curvature. As in Najlepszfoto.pl, the production in Zelgraf takes place according to specific orders only. The research in Zelgraf lasted for 60 weeks, between July 2009 and September 2010.

Alfa company is the third company, in which the research was carried out. It is a medium-size clothing company based in the Subcarpathian (Podkarpackie Province). It sews smart, evening trousers for men for the Polish and overseas markets. The production is based on repetition. The study used data from 2006 covering 51 weeks.

Initially, the key mental model variables of the labour force system have been defined. The variables are presented in Table 1.

⁷ M. Baran, Dynamika związków pomiędzy podsystemami produkcji i zatrudnieniem. Przypadek przedsiębiorstwa ALFA. In: A. Nalepka, A. Ujwary – Gil (Ed.), *Organizacje komercyjne i niekomercyjne wobec wzmożonej konkurencji oraz wzrastających wymagań konsumentów*, SOWA – Drukarnia Cyfrowa, Warszawa 2010, pp. 117-131.

Table 1. Mental model variables of the labour force system

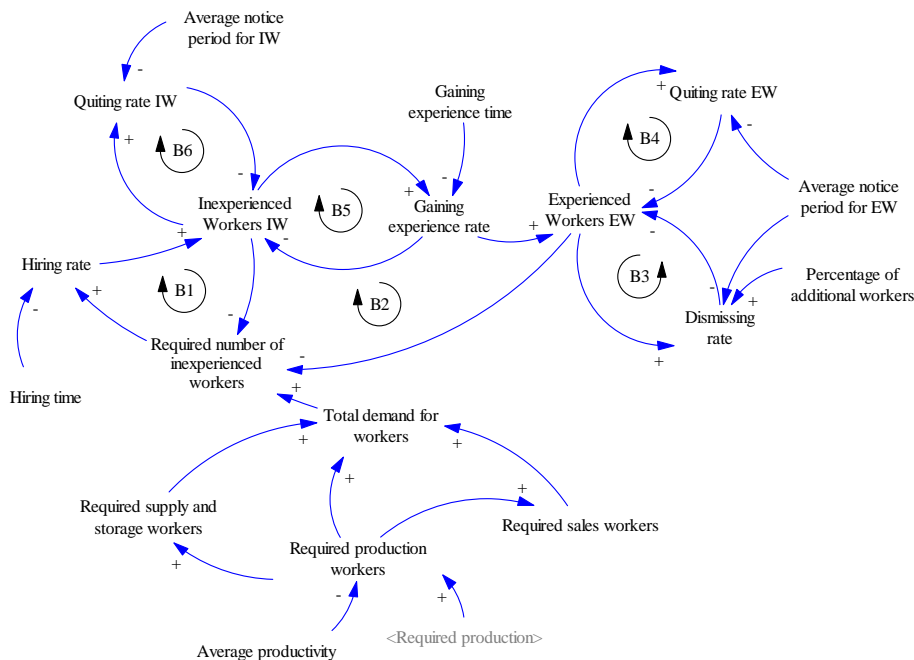
Variable	Description
Inexperienced Workers IW	The number of newly hired workers who possess certain skills, however lack the experience
Hiring rate	The stream of new workers hired
Quitting rate IW	The stream of new workers leaving the job because of being dismissed by the management of the manufacturing company, as well as quitting at their own request
Gaining experience rate	The number of new workers (per a time unit) who, having gained experience, are considered as fully capable labour force
Gaining experience time	The time to gain experience by new workers
Required number of inexperienced workers	The variable regulating the pace of hiring new workers It results from the comparison of "Total demand for workers" with the number of workers employed in the manufacturing company
Total demand for workers	The number of new workers required to work, resulting directly from the sum total of the amount of "Required supply and storage workers", "Required production workers" and "Required sales workers"
Hiring time	The time to adjust the number of workers to the desired level
Required production workers	The number of new workers required to production
Average productivity	The average efficiency of experienced workers It means the quantity of products manufactured by a single worker in a given time unit
Required supply and storage workers	The number of workers required to work in supply and storage
Required sales workers	The number of workers required to work in sales
Experienced Workers EW	The number of experienced workers employed in the manufacturing company
Quitting rate EW	The stream of workers quitting at their own request or due to retirement age
Dismissing rate	The stream of employees dismissed by the management due to excessive employment
Percentage of additional workers	It indicates the maximum number of excess workers in the company
Average notice period for EW	The time connected to the process of dismissing workers stipulated by procedures
Average notice period for IW	The time connected to the process of dismissing new workers

	stipulated by procedures
Required production	The required level of production determined by the size of orders

Source: Own elaboration

In the next step a diagram showing direct and indirect cause - effect relationships between variables was constructed (Fig. 1).

Figure 1. Cause – effect diagram of the labour force system



Source: Authors elaboration in Vensim DSS Version 5.9e.

The diagram reflects the process of determining the number of workers which is essential to the production required. The impetus for determining “Total demand for workers” is “Required production”, which, together with “Average productivity”⁸ initially determines “Required production workers”. It was assumed that “Required supply and storage workers” and “Required sales workers” depend on “Required production workers”. The sum total of “Required production workers”, “Required supply and storage workers” and “Required sales workers” determines “Total demand for workers”. This

⁸ The model assumes that the company owns a fleet of machinery, which is regularly reviewed and maintained so that it is not damaged. This allows us to assume “Average productivity”.

demand is compared with the actual number of workers employed and the resultant difference is the cue for "Hiring rate", that is the hiring of new workers.

At the beginning, the newly-hired workers are treated as "Inexperienced Workers IW", who, not being experienced yet, are trained. Some of them leave due to various reasons, e.g. at their own request. It is reflected by "Quitting rate IW" and delayed "Average notice period for IW". The remaining new workers gain the required experience after "Gaining experience time" and are treated as "Experienced Workers EW". "Experienced Workers EW" may also leave work, which is reflected by "Quitting rate EW". It may happen, among others, on their own request or due to retirement age. Workers may also be dismissed on disciplinary grounds. "Dismissing rate" serves a different function. It reflects a situation in which a manufacturing company decides to dismiss excess workers. The amount of dismissed workers is solely the one exceeding the sum total of "Total demand for workers" and "Percentage of additional workers", which is the so-called "labour reserve", which is used in case there is a need to replace workers on leave or sick leave. Dismissals of workers do not occur immediately, but according to "Average notice period for EW".

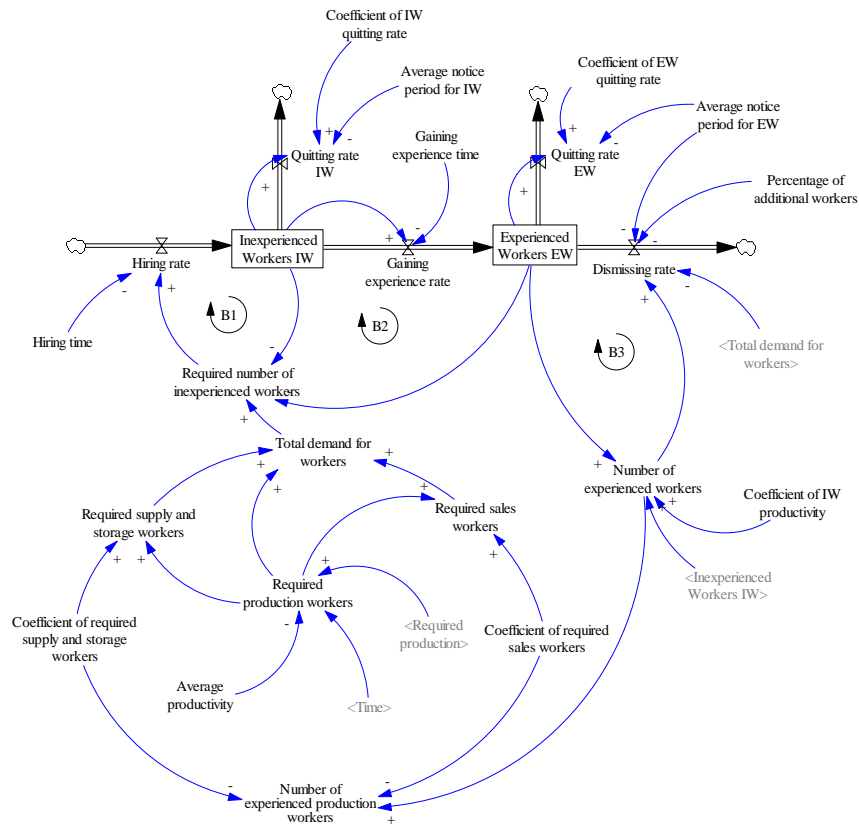
In the diagram above, six consecutive instances of negative feedback - B1 , B2 , B3 , B4 , B5 and B6 were determined, testifying to the existing dynamics in the system.

Next the authors converted the above diagram into a simulation model of the system of labour force (Fig.2). Mental model variables were presented as mathematical variables and constants. The needed coefficients were added. The accumulation, flow variables and auxiliary (information) variables and the mathematical relationships existing between them were indicated. The model was built in the simulation system Vensim DSS Version 5.9e, so the mathematical apparatus was presented with the available functions and mathematical expressions.

There are following accumulation variables in the simulation model:

- "Average notice period for EW" increased by a flow variable "Hiring rate" and reduced by a flow variable "Gaining experience rate";
- "Experienced Workers EW" increased by a flow variable "Gaining experience rate" and reduced by a flow variable "Dismissing rate".

Figure 2. Simulation model of the labour force system



Source: Authors elaboration in Vensim DSS Version 5.9e

Definitions of variables and mathematical constants contained in the simulation model are presented in Table 2.

Table 2. Definitions of variables and mathematical constants of the labour force model

Variable/constant	Definition	Unit
Inexperienced Workers IW	INTEG(Hiring rate-Quitting rate IW-Gaining experience rate) Initial value: 0	[person]
Hiring rate	Required number of inexperienced workers/Hiring time	[person/week]
Hiring time	The characteristic value for the company	[week]
Quitting rate IW	Inexperienced Workers IW*Coefficient of IW	[person/week]

	quitting rate/Average notice period for IW	
Coefficient of IW quitting rate	The characteristic value for the company	[-]
Average notice period for IW	The characteristic value for the company	[week]
Gaining experience rate	Inexperienced Workers IW/Gaining experience time	[person/week]
Gaining experience time	The characteristic value for the company	[week]
Required number of inexperienced workers	MAX(0, (Total demand for workers-Inexperienced Workers IW-Experienced Workers EW))	[person]
Total demand for workers	Required supply and storage workers+Required production workers+Required sales workers	[person]
Required production workers	Required production(Time)/Average productivity	[person]
Average productivity	The characteristic value for the company	[unit/week/person]
Required supply and storage workers	Coefficient of required supply and storage workers*Required production workers	[person]
Coefficient of required supply and storage workers	The characteristic value for the company	[-]
Required sales workers	Coefficient of required sales workers*Required production workers	[person]
Coefficient of required sales workers	The characteristic value for the company	[-]
Experienced Workers EW	INTEG(Experienced Workers EW) Initial value: Total demand for workers	[person]
Quitting rate EW	Experienced Workers EW*Coefficient of EW quitting rate/Average notice period for EW	[person/week]
Coefficient of EW quitting rate	The characteristic value for the company	[-]
Dismissing rate	IF THEN ELSE(Number of experienced workers/MAX(1,Total demand for workers)>1+Percentage of additional workers/100, (Number of experienced workers-Total demand for workers*(1+Percentage of additional workers/100))/Average notice period for EW, 0)	[person/week]
Percentage of additional workers	The characteristic value for the company	[-]
Average notice period	The characteristic value for the company	[week]

for EW		
Number of experienced workers	Experienced Workers EW+(Coefficient of IW productivity*Inexperienced Workers IW)	[person]
Coefficient of IW productivity	The characteristic value for the company	[-]
Number of experienced production workers	Number of experienced workers/(Coefficient of required supply and storage workers+Coefficient of required sales workers+1)	[person]

Source: Own elaboration.

In the next investigations, the validation of the simulation model was conducted by using the following methods:

- assessing the correctness of the boundary of modelling, adequacy of the model structure and adopted values (constants) compared with available knowledge about the modelled system;
- testing the accuracy and consistency of the units of the variables adopted in the model;
- testing the model behaviour in extreme conditions.

The main objective of building the model was to provide a general representation of labour system in a manufacturing company with key decision rules of controlling this system. Accordingly, variables which could present the system quantitatively were chosen. The executives and experts of the manufacturing companies researched were present during the selection of the variables for the model, as well as during the creation of the model structure. Scientific literature was used, too. The people authorized by management provided the parameter values that were adopted in the model. All parameter values (constants) were averaged by them. All these activities can prove the correctness of the boundary of modelling and the structure of the system and the accuracy of the adopted model parameters.

One of the key measures of determining the correctness of the relationship between the variables in the model, which is also responsible for the overall validity of the model, is to test the cohesion of the units of the variables adopted in the model. The test was conducted directly in the program, in which the model was built, by using the *Check Units* command. The test confirmed the correctness of the units.

The testing of the model in extreme conditions was to check its behaviour when the values of the constants took an amount equal to 0 or a very large size. The program did not report any errors in the model during the tests.

4. THE SIMULATION OF THE LABOUR FORCE MODEL

The following table (Table 3) contains constants obtained from the manufacturing companies studied.

Table 3. Empirical data from companies studied

Constants	Najlepszefoto.pl	Zelgraf	Alpha
Required production	[(0,0)-(56,600)],(0,130),(1,170),(2,227),(3,284),(4,187),(5,185),(6,248),(7,216),(8,166),(9,150),(10,148),(11,155),(12,139),(13,184),(14,113),(15,120),(16,127),(17,156),(18,116),(19,115),(20,129),(21,128),(22,136),(23,156),(24,162),(25,194),(26,198),(27,162),(28,223),(29,231),(30,259),(31,379),(32,272),(33,279),(34,420),(35,490),(36,356),(37,312),(38,307),(39,321),(40,336),(41,331),(42,342),(43,337),(44,352),(45,346),(46,329),(47,352),(48,458),(49,350),(50,352),(51,368),(52,321),(53,296),(54,290),(55,349),(56,284)	[(0,0)-(61,55)],(0,12),(1,17),(2,10),(3,12),(4,24),(5,8),(6,5),(7,20),(8,16),(9,31),(10,7),(11,5),(12,8),(13,19),(14,6),(15,27),(16,12),(17,5),(18,5),(19,13),(20,5),(21,21),(22,23),(23,5),(24,0),(25,0),(26,0),(27,4),(28,11),(29,3),(30,9),(31,12),(32,7),(33,17),(34,24),(35,21),(36,4),(37,5),(38,10),(39,35),(40,14),(41,8),(42,14),(43,42),(44,0),(45,23),(46,13),(47,5),(48,9),(49,6),(50,2),(51,38),(52,15),(53,10),(54,0),(55,14),(56,10),(57,16),(58,26),(59,51),(60,13)	[(0,0)-(56,230)],(0,61),(1,135),(2,0),(3,8),(4,29),(5,10),(6,47),(7,37),(8,87),(9,76),(10,61),(11,185),(12,169),(13,216),(14,72),(15,118),(16,79),(17,143),(18,69),(19,128),(20,58),(21,35),(22,73),(23,29),(24,59),(25,0),(26,0),(27,0),(28,35),(29,25),(30,52),(31,83),(32,114),(33,15),(34,72),(35,92),(36,81),(37,85),(38,99),(39,80),(40,103),(41,120),(42,93),(43,129),(44,122),(45,92),(46,74),(47,105),(48,228),(49,166),(50,151),(51,0)
Hiring time	2	6	0.02
Coefficient of IW quitting rate	0.06	0.02	0.01
Gaining experience time	4	6	0.02
Average productivity	19	7	50
Coefficient of required supply and storage workers	0.04	0.04	0.06
Coefficient of required sales workers	0.04	0.03	0.03

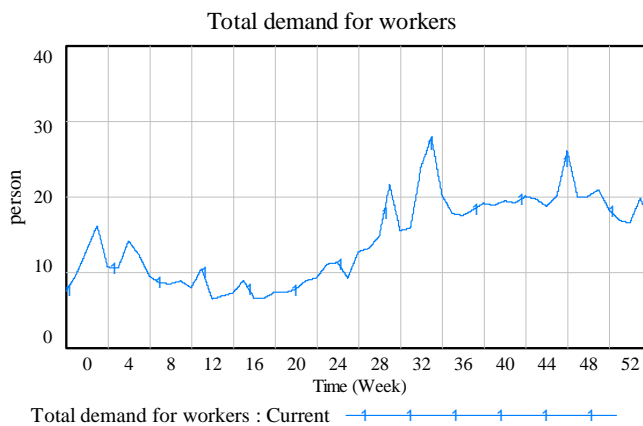
Coefficient of EW quitting rate	0.02	0.01	0.01
Percentage of additional workers	20	100	10
Coefficient of IW productivity	0.7	0.5	1
Average notice period for IW	1	1	1
Average notice period for EW	4	12	4

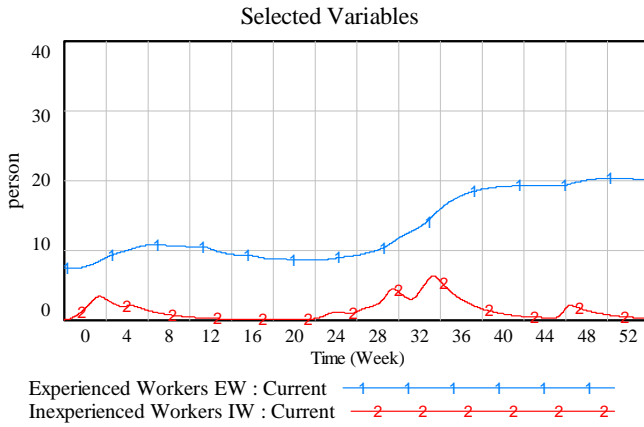
Source: Own elaboration.

After completing the model data obtained in the investigated enterprises, the simulation of the model was conducted. The 0.015625 simulation step was set. The runs of accumulation variables are shown in Figure 3.

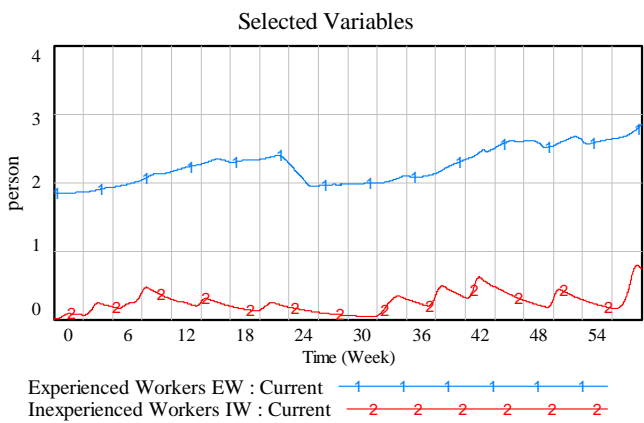
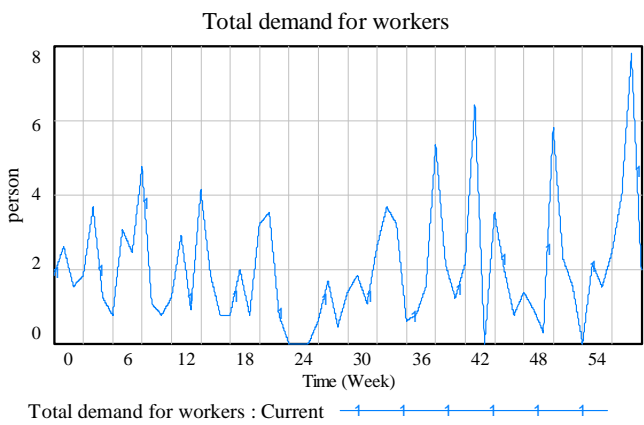
Figure 3. Runs of accumulation variables in the investigated enterprises

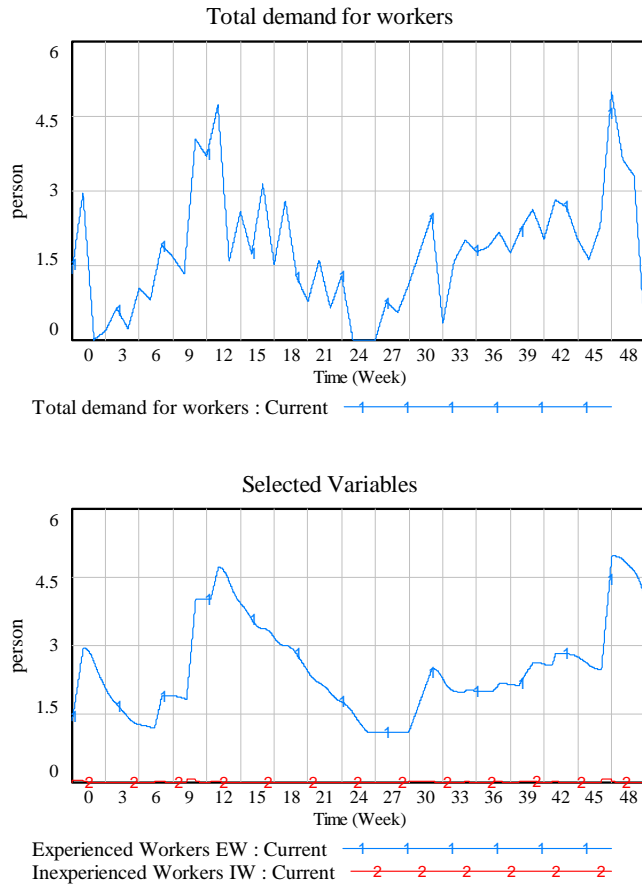
In Najlepszefoto.pl





In Zelgraf



In Alfa

Source: Authors elaboration in Vensim DSS Version 5.9e

The runs of such variables as “Total demand for workers”, “Experienced Workers EW” and “Inexperienced Workers IW” in response to the “Required production” are shown in the graphs above for each of the manufacturing companies investigated. The variable “Total demand for workers” determines the total number of workers, including the immediate production, supply, storage and sales workers. In the case of Najlepszefoto.pl manufacturing company, the run of the variable is less rapid than in the two following cases. This results directly from the less significant leaps of production over time in this company. Both in the case of Zelgraf and Alfa manufacturing companies there were such periods of time for which the value of “Total demand for workers” amounted to 0. This is the time when the manufacturing companies had holiday breaks and the volumes of production also amounted to 0.

The accumulation variables show the number of both experienced and inexperienced workers in the investigated manufacturing companies. In the case of NajlepszeFoto.pl and Zelgraf manufacturing companies the runs of the variable “Experienced Workers EW” are characterised by mild increases, while the values of the variable “Inexperienced Workers IW” are subject to constant fluctuations due to changes in the volumes of production and the fact that inexperienced workers gain the status of experienced workers over time. In Alfa company the run of the variable “Experienced Workers EW” is more dynamic, which is also related directly to changes in the volumes of production, while the values of the variable “Inexperienced Workers IW” may be said to amount to 0. This is related to the fact that the company did not need new workers because the study included only one assortment of its production delegated to already employed workers.

5. CONCLUSION

The simulation model of the labour force for the manufacturing company was constructed using the Systems Dynamics method. In order to construct the model, variables indicated by the management of the investigated manufacturing companies or by the people selected by the managerial staff. Their key mental models were verbalised and initially shown as cause - effect diagrams. Next the diagrams were converted into a simulation model, which was then tested. The final form of the model has been presented in this article.

Currently the model can be used for the following purposes:

- forecasting the size of the workforce in response to the required production
- discovering correlations between variables which build the system of labour force
- testing strategies related to the management of workforce before their practical implementation
- predicting the effects of decision – making processes in the short and long term
- training young managers

The model can also be adopted by other manufacturing companies after adjusting it to the conditions and the environment of these companies.

REFERENCES

- [1] Baran M., *Dynamika związków pomiędzy podsystemami produkcji i zatrudnieniem. Przypadek przedsiębiorstwa ALFA* [w:] A. Nalepka, A. Ujwary – Gil (Ed.), *Organizacje komercyjne i niekomercyjne wobec wzmożonej konkurencji oraz wzrastających wymagań konsumentów*, SOWA – Drukarnia Cyfrowa, Warszawa 2010.
- [2] Forrester, J., *Industrial Dynamics*, Cambridge: MIT Press 1961.
- [3] Forrester, J., *Urban Dynamics*, Cambridge: MIT Press 1969.
- [4] Forrester, J., *Principles of Systems*, Cambridge: MIT Press 1981.
- [5] Kasperska, E., *Dynamika systemowa. Symulacja i Optymalizacja*, Wydawnictwo Politechniki Śląskiej, Gliwice 2005.
- [6] Krupa K., *Modelowanie, symulacja i prognozowanie. Systemy ciągłe*, Wydawnictwo Naukowo – Techniczne, Warszawa 2008.
- [7] Łukaszewicz, R., *Dynamika systemów zarządzania*, PWN, Warszawa 1975.
- [8] Piekarczyk A., Zimniewicz K., *Myślenie sieciowe w teorii i praktyce*, PWE, Warszawa 2010.
- [9] Senge, P.M., *Piąta dyscyplina. Teoria i praktyka organizacji uczących się*, Oficyna Ekonomiczna Wolters Kluwer Polska, Kraków 2006.

- [10] Śliwa, K. R., *O Organizacjach Inteligentnych i rozwiązywaniu złożonych problemów zarządzania nimi*, Oficyna Wydawnicza WSM SIG, Warszawa 2001.
- [11] Souček, Z., *Modelowanie i Projektowanie Systemów Gospodarczych*, PWE, Warszawa 1979.
- [12] Sterman, J., *Business Dynamics: Systems Thinking and Modeling for a Complex World*, Irwin McGraw-Hill, Boston 2000.
- [13] Tarajkowski, J. (Ed.), *Elementy Dynamiki Systemów*, Wydawnictwo Akademii Ekonomicznej, Poznań 2008.
- [14] Wąsik, B., *Elementy dynamiki systemowej dla ekonomistów*, Wydawnictwo Akademii Ekonomicznej, Kraków 1983.

SYMULACYJNY MODEL SIŁY ROBOCZEJ ZATRUDNIANEJ W PRZEDSIĘBIORSTWIE PRODUKCYJNYM OPRACOWANY W KONWENCJI METODY DYNAMIKI SYSTEMÓW

Artykuł prezentuje metodykę konstruowania symulacyjnego modelu siły roboczej zatrudnianej w przedsiębiorstwie produkcyjnym. Metodyka oparta jest o metodę Dynamiki Systemów. Badania przedstawione w artykule przeprowadzono w trzech polskich przedsiębiorstwach. Początkowo wyznaczono kluczowe zmienne związane z modelem myślowym. Skorzystano w tym etapie w wiedzy kierownictwa oraz osób bezpośrednio odpowiedzialnych za siłę roboczą w danym przedsiębiorstwie. Kolejnym krokiem było powiązanie wyznaczonych zmiennych w diagramy przyczynowo – skutkowe, co pozwoliło na przedstawienie bezpośrednich i pośrednich powiązań pomiędzy zmiennymi oraz odkrycie rodzajów sprzężeń zwrotnych występujących w systemie. Następnie diagram przyczynowo – skutkowy przekonwertowano na model symulacyjny, wykorzystując przy tym oprogramowanie Vensim®. Dokonano także walidacji zaproponowanego modelu wykorzystując takie metody jak: oszacowanie poprawności granic modelowania oraz poprawności struktury modelu razem z wyznaczonymi zmiennymi w oparciu o dostępną wiedzę o modelowanym systemie; testowanie poprawności przyjętych jednostek opisujących poszczególne zmienne oraz testowanie zachowania się modelu w warunkach ekstremalnych. Metody walidacji potwierdziły poprawność przedstawionego modelu. W końcowym etapie przeprowadzono symulację modelu dla badanych przedsiębiorstw oraz omówiono otrzymane wyniki. Artykuł kończą ogólne wskazania związane z użytkowaniem modelu.

Słowa kluczowe: modelowanie symulacyjne, Dynamika Systemów, siła robocza, przedsiębiorstwo produkcyjne.

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TSL SERVICES MARKET AS A SUPPORT SYSTEM OF THE POLISH ECONOMY

Transport, Spedition and Logistics (TSL) are considered to be one of the main services markets of the Polish economy. The relationship between the development of the national economy and the development of the TSL services market is due to the fact that TSL is a carrier of the economy. Globalization, the development of information and communication technologies, and Polish accession to the European Union are factors favoring the development of this particular market. The purpose of the paper is to verify whether a change of selected variables in analyzed market affects general changes of the national economy in Poland. The defined objective was realized through the analysis of literature and research desk. The analysis of statistical data covers the period of 2004 to 2013. The theoretical part presents the scope and requirements of the development of the TSL services market. The empirical part conducts a retrospective analysis of the evolution of the variables that were considered relevant for analysis of TSL services market and identifies its importance to the national economy in Poland. The authors chose arbitrarily defined indicators whose impact on economic development they considered important: the number of companies, the number of employees, gross profit and participation in the GDP. It was found that in the analyzed period there were dynamic changes in the TSL services market. These changes reflect the fluctuations of the Polish economy - periods of economic recovery and recession, which confirms the assumption that the TSL services market can be treated as a carrier of a country's economy.

Keywords: TSL services market, carrier of economy, support system of economy

1. INTRODUCTION

Transport, Spedition and Logistics (TSL) are considered to be one of the key services markets of the Polish economy. The relationship between the development of the national economy and the development of the TSL services market is due to the fact that TSL is a carrier of the economy. Globalization, development of information and communication technologies, and Polish accession to the European Union are factors favoring the development of this particular market.

The objective of this paper is to verify whether a change of selected variables in TSL services market affects general changes of the national economy in Poland. In order to

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achieve it, an analysis of the literature and desk research were done. The theoretical part presents the scope and requirements of the development of the TSL services market. The empirical part contains a retrospective analysis of the evolution of the variables that were considered relevant for analyzing TSL services market, and identifies its importance to the national economy in Poland.

2. TSL SERVICES MARKET - THE SCOPE AND CONDITIONS OF THE DEVELOPMENT

Analyzing the TSL market in Poland, Szyszka recognized the following groups of companies providing services: transport and rail forwarding, transport and road forwarding, courier services, storage, transport and mixed forwarding⁴. Given the scope of the activities of the market, however, the TSL should be complemented by pipeline transport services, air and postal operations.

Before the presentation of the basic conditions for the development of the TSL market in Poland, it should be noted that while transport and storage services, as well as postal activities, were present in Poland also in the past, logistics services appeared only in the late 80s of the twentieth century. The biggest development of the TSL sector followed the Polish accession to the EU, together with the abolition of barriers to movement of people and goods. This also resulted from the absorption of EU funds, which significantly contributed to the improvement in road infrastructure, both in terms of its quantity and quality.

Currently, the market for logistics services owes its growth to the increasing corporate decisions to outsource, undertaken as a result of optimizing supply and distribution systems. According to Grucki, the demand for logistics services, primarily from large manufacturers and retailers, should be seen as results of: technical complexity of the supply chain, due to higher requirements of manufacturing companies and retail networks; new requirements for the operation of integrated logistics chains that force demand for increasing financial resources to maintain an adequate level of service; globalization activities of manufacturing companies and retail chains; and the need to coordinate them on a global scale.⁵

Grucki also notes that all the sources of growth in demand for logistics services are closely linked to each other and they come from two main features which are characteristic of modern logistics market: multi-level functions and area of geographical activities of enterprises and engineering solutions. It comes down to the fact that not only do logistics companies manage more plants or features, but also they have the ability to create logistics processes with customers⁶. As a result, determinants of the development of the analyzed market are related to both micro and macro scale.

⁴G. Szyszka, *Logistyka w Polsce w latach 2006-2007*, [in:] *Logistics 2008. Nowe wyzwania-nowe rozwiązania*, Instytut Logistyki i Magazynowania, Poznań 2008, p.25.

⁵K. Grucki, *Rynek usług logistycznych*, [in:] *Logistyka w biznesie*, M. Ciesielski (Ed.), Polskie Wydawnictwo Ekonomiczne, Warszawa 2006, pp. 213–214.

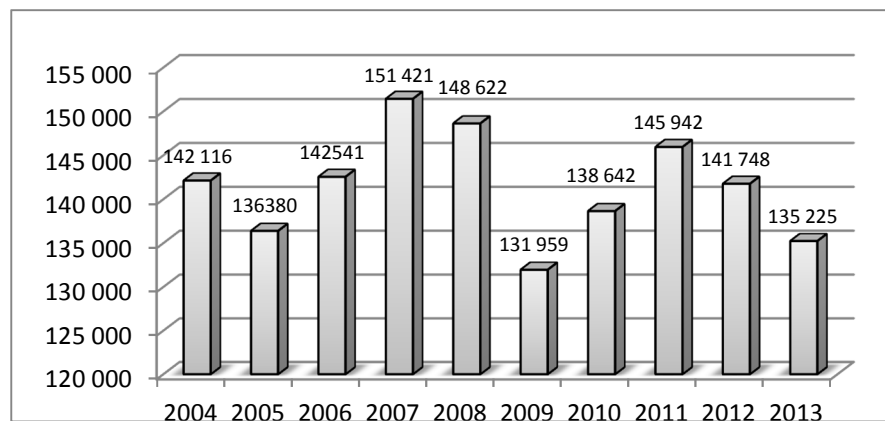
⁶K. Grucki, *Rynek usług logistycznych*, [in:] *Logistyka w biznesie*, M. Ciesielski (Ed.), Polskie Wydawnictwo Ekonomiczne, Warszawa 2006, pp. 213–214.

3. ANALYSIS OF THE TSL SERVICES MARKET IN POLAND IN 2004-2013

The analysis of the TSL services market was carried out taking into account the data of the Central Statistical Office of Poland (GUS), related to the *Transportation and Storage* section (section H according to the Polish Classification of Activities 2007 – PKD 2007), covering the period of 2004–2013.⁷ This section is divided into: land and pipeline transports, water transport, air transport, warehousing and support activities for transportation, postal and courier activities. The study used the data on: the number of enterprises, the number of employees, gross financial result and contribution to GDP.

The number of companies in the *Transportation and Storage* section over the last ten years has been changing, which was caused by fluctuations of the Polish economy. It is also linked with the processes of consolidation and concentration of TSL market. As you can see in Fig. 1, we observe two periods in which the number of businesses reached the highest values, i.e. 2006–2008 and 2010–2012. These periods correspond to periods of a favorable situation in the Polish economy. A significant reduction in the number of TSL firms in 2009 was due to the economic crisis that began in the global banking market. It should also be noted that starting from 2012, we again observed a decrease in the number of TSL firms, which could mean a further economic slowdown.

Fig. 1. Changes in the number of enterprises in the *Transportation and Storage* section in Poland from 2004 to 2013

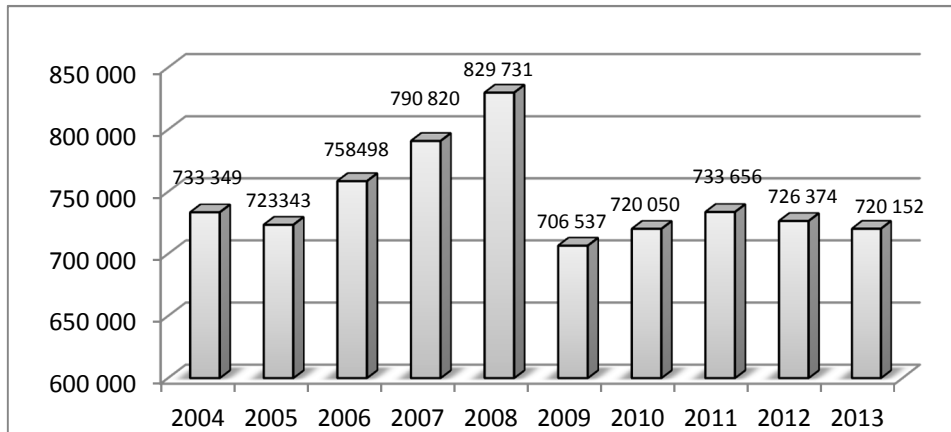


Source: Elaborated using GUS data.

Changes in the number of companies linked to the change in the number of employees. In view of the fact that in the analyzed period, as outlined above, there were significant changes in the number of enterprises, it is expected that this fact will result in changes in the number of employees. Detailed data are shown in Fig. 2.

⁷According to the fact that in the Polish Classification of Activities 2007 (PKD 2007) there isn't a section of TSL services, it is assumed that TSL services are the closest to Section H *Transportation and Storage*; cf.: C. Mańkowski, *Polski rynek usług logistycznych wobec kryzysu gospodarczego w Unii Europejskiej*, "Prace I Materiały Instytutu Handlu Zagranicznego Uniwersytetu Gdańskiego" 2012 nr 31/2, p. 214.

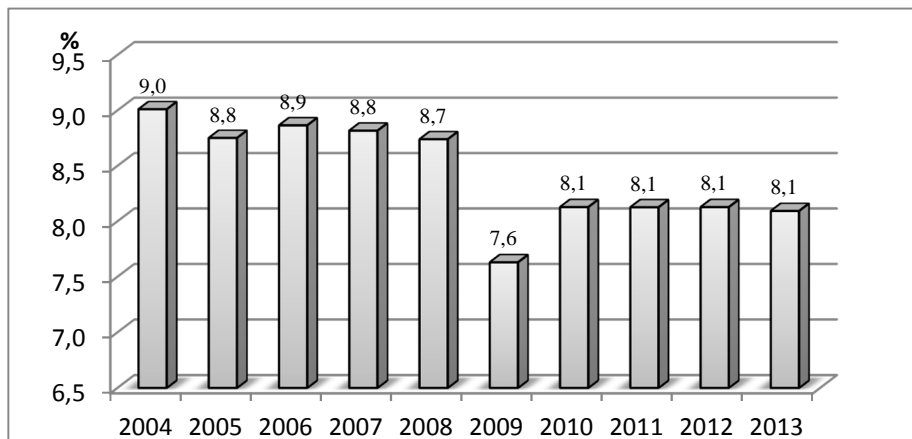
Fig. 2. Changes in the number of employees in the *Transportation and Storage* section in Poland from 2004 to 2013



Source: Elaborated using GUS data.

In order to determine the share of the analyzed section in the labor market in Poland, Figure 3 shows the percentage of the number of people working in this section in relation to the total number of employees in Poland. The largest decline in the number of employees in the *Transportation and Storage* section was observed in 2009, which was due to a significant decrease in the number of enterprises.

Fig. 3 Contribution of the *Transportation and Storage* section to labour market in Poland in from 2004 to 2013



Source: Elaborated using GUS data.

As profit is one of the basic measures of economic evaluation of the company, the gross profit of companies in Section H was analyzed. As seen in Table 1, the best results

in terms of profit in this section were achieved in 2006 and 2007. It was a period in which sales revenue grew at a faster rate than the cost of revenue. The lowest gross profit was observed in 2008, which was due to the fact that the cost of revenue grew faster than the total revenue, including the deterioration in the results on financial operations. High rates of growth on the basis of this variable in the following years were caused by the very low value of the base in 2008.

Table 1. Dynamic indicators of gross profit in the *Transportation and Storage* section in Poland in 2004–2013⁸

Years	Gross profit (billion PLN)	Single base index (2004 = 100)	Chain index (previous year = 100)
2004	3182,7	100	-
2005	1025,3	32,2	32,2
2006	3107,5	97,6	303,1
2007	3738,7	117,5	120,3
2008	605,5	19,0	16,2
2009	1053,9	33,1	174,1
2010	1823,1	57,3	173,0
2011	1913,0	60,1	104,9
2012	2158,9	67,8	112,9
2013	2701,1	84,9	125,1

Source: elaborated using GUS data.

4. IMPORTANCE OF THE TSL SERVICES MARKET TO THE POLISH ECONOMY

In the literature there is a consensus that the rate of growth of the national economy is relevant to changes in transport, spedition and logistics. Logistics constitutes an important element of the economic system, which enables smooth functioning of the national economy⁹. The importance of transport for the national economy is due to its multilateral links between all forms of business, manufacturing, cultural, and settlement activities. This results from needs which may be satisfied just by transport¹⁰.

Research on the global economy, taking China as an example, shows relationship between logistics development and economic growth in both short and long term perspec-

⁸ data regard entities which employed more than 49 people.

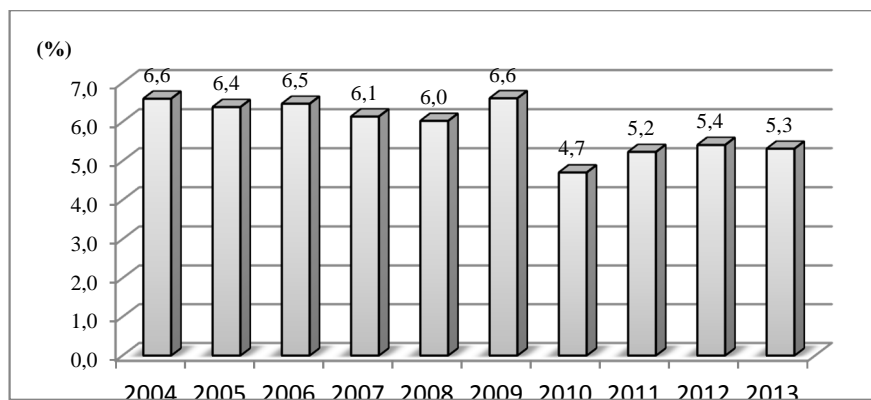
⁹I. Fechner, G. Szyszka (Eds.), *Logistyka w Polsce. Raport 2007*, Instytut Logistyki i Magazynowania, Poznań 2008, p.15.

¹⁰M. Mindur, *Wzajemne związki i zależności między rozwojem gospodarki a transportem*, Wydawnictwo Instytutu Technologii Eksploatacji, Warszawa 2004, p. 139.

tive¹¹. Often, therefore, TSL services market is defined as so-called *support system of economy* or *carrier of economy* that allows development of other areas, such as trade and other services for the population.

Analysis of the TSL services market` development in European countries shows that productivity of this market can be higher comparing to the total economy. For example, Langviniene and Sliziene stated that in Lithuania 7% of employees worked in the transport and logistics services and they created 13% of GDP in 2013¹². In Poland, as shown in Figure 4, there is more than 6% of the section's share in GDP before 2010 and we observe a decrease to about 5% from 2010.

Fig. 4. The share of the *Transportation and Storage* section in the GDP of Poland from 2004 to 2013



Source: Elaborated using GUS data.

5. SUMMARY

In the light of the desk research presented above, in the period from 2004 to 2013 we observed dynamic changes in section H in Poland in terms of the number of enterprises, the number of employees, gross profit and contribution to GDP. These changes reflect fluctuations of the Polish economy - periods of recovery and economic down turn, which confirms the assumption made in the paper about the carrying capacity of the TSL services market for the economic system of the country.

It seems that at present the biggest challenges for the analyzed market are an increasingly diverse customer expectation (particularly institutional) and the need to increase economic efficiency. The first of these factors is related to the four fundamental trends characteristic of modern enterprises operating activities: transition from the transaction to the process and network, application of information technology, transition from regional

¹¹H.H. Lean, W. Huang, J. Hong, *Logistics and economic development: Experience from China*, "Transport Policy", 2014/32.

¹²N. Langviniene, G. Sliziene, *Management of sustainable transport and logistics services sector's growth in the context of Lithuanian economic development*, "Procedia of Social and Behavioral Sciences", 2014/156, p. 19.

business to business network, changes in business operation strategies from push to pull.¹³

It should be noted that the above-mentioned factors influence the TSL services market development. Thus, they constitute a chance in attracting new customers, both in terms of geographic expansion and the market. On the other hand, these factors constitute a significant challenge to this market. Rucińska recognizes that the buyers of the TSL services clearly formulate demands with regard to operators expecting personalized, flexible services of high standards¹⁴. These factors are also related to the need to increase economic efficiency in this market.

REFERENCES

- [1] Fechner, G. Szyszka (Eds.), *Logistyka w Polsce. Raport 2007*, Instytut Logistyki i Magazynowania, Poznań 2008
- [2] GUS, *Działalność przedsiębiorstw niefinansowych w 2004r.*, ZWS, Warszawa 2005
- [3] GUS, *Transport – wyniki działalności w 2004r.*, ZWS, Warszawa 2005
- [4] GUS, *Działalność przedsiębiorstw niefinansowych w 2005r.*, ZWS, Warszawa 2006
- [5] GUS, *Transport – wyniki działalności w 2005r.*, ZWS, Warszawa 2006
- [6] GUS, *Działalność przedsiębiorstw niefinansowych w 2006r.*, ZWS, Warszawa 2007
- [7] GUS, *Transport – wyniki działalności w 2006r.*, ZWS, Warszawa 2007
- [8] GUS, *Działalność przedsiębiorstw niefinansowych w 2007r.*, ZWS, Warszawa 2008
- [9] GUS, *Transport – wyniki działalności w 2007r.*, ZWS, Warszawa 2008
- [10] GUS, *Działalność przedsiębiorstw niefinansowych w 2008r.*, ZWS, Warszawa 2009
- [11] GUS, *Transport – wyniki działalności w 2008r.*, ZWS, Warszawa 2009
- [12] GUS, *Działalność przedsiębiorstw niefinansowych w 2009r.*, ZWS, Warszawa 2010
- [13] GUS, *Transport – wyniki działalności w 2009r.*, ZWS, Warszawa 2010
- [14] GUS, *Działalność przedsiębiorstw niefinansowych w 2010r.*, ZWS, Warszawa 2011
- [15] GUS, *Transport – wyniki działalności w 2010 r.*, ZWS, Warszawa 2011
- [16] GUS, *Działalność przedsiębiorstw niefinansowych w 2011r.*, ZWS, Warszawa 2012
- [17] GUS, *Transport – wyniki działalności w 2011r.*, ZWS, Warszawa 2012
- [18] GUS, *Działalność przedsiębiorstw niefinansowych w 2012r.*, ZWS, Warszawa 2013
- [19] GUS, *Transport – wyniki działalności w 2012r.*, ZWS, Warszawa 2013
- [20] GUS, *Działalność przedsiębiorstw niefinansowych w 2013r.*, ZWS, Warszawa 2014
- [21] GUS, *Transport – wyniki działalności w 2013r.*, ZWS, Warszawa 2014
- [22] K. Grucki, *Rynek usług logistycznych*, [in:] M. Ciesielski (Ed.), *Logistyka w biznesie*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2006
- [23] H.H. Lean, W. Huang, J. Hong, *Logistics and economic development: Experience form China*, “Transport Policy”, 2014/32
- [24] N. Langviniene, G. Sliziene, *Management of sustainable transport and logistics services sector`s growth in the context of Lithuanian economic development*, “Proceedia of Social and Behavioral Sciences”, 2014/156
- [25] C. Mańkowski, *Polski rynek usług logistycznych wobec kryzysu gospodarczego w Unii Europejskiej*, “Prace i Materiały Instytutu Handlu Zagranicznego Uniwersytetu Gdańskiego” 2012 nr 31/2

¹³K. Grucki, *Rynek usług logistycznych*, [in:] M. Ciesielski (Ed.), *Logistyka w biznesie*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2006, pp. 213–214.

¹⁴D. Rucińska, *Strategiczne aspekty kształtowania polskiego rynku usług transportowo –spedycyjno – logistycznych*, www.pte.pl/kongres/referaty/dirRuciskaDanuta, (data dostępu: 2015.02.07), p. 15.

- [26] M. Mindur, *Wzajemne związki i zależności między rozwojem gospodarki a transportem*, Wydawnictwo Instytutu Technologii Eksploatacji, Warszawa 2004
- [27] D. Rucińska, *Strategiczne aspekty kształtowania polskiego rynku usług transportowo – spedycyjno – logistycznych (TSL)*, www.pte.pl/kongres/referaty/dirRuciskaDanuta
- [28] G. Szyszka, *Logistyka w Polsce w latach 2006-2007*, [in:] *Logistics 2008. Nowe wyzwania-nowe rozwiązania*, Instytut Logistyki i Magazynowania, Poznań 2008

RYNEK USŁUG TSL JAKO SYSTEM NOŚNY POLSKIEJ GOSPODARKI

Transport, spedycja i logistyka (TSL) są uważane za jeden z kluczowych rynków usługowych polskiej gospodarki. Związek pomiędzy rozwojem gospodarki narodowej a rozwojem rynku TSL wynika z faktu, że pełni on rolę systemu nośnego, świadczącego usługi dla pozostałych sektorów gospodarki. Czynniki szczególnie sprzyjającymi rozwojowi tej branży są globalizacja, rozwój technologii informacyjno-komunikacyjnych oraz akcesja Polski do struktur Unii Europejskiej. Celem artykułu jest weryfikacja wpływu wybranych zmiennych dotyczących rynku usług TSL na ogólne zmiany w gospodarce w Polsce. Dla jego realizacji przeprowadzono analizę literatury przedmiotu oraz badania typu *desk research*. Analiza danych statystycznych objęła szereg czasowy 2004-2013. W teoretycznej części artykułu przedstawiono zakres i uwarunkowania rozwojowe analizowanego rynku. W części empirycznej przeanalizowano zmienne, które uznano za istotne w rozwoju rynku usług TSL i jego znaczenia dla gospodarki krajowej, tj.: liczbę przedsiębiorstw, liczbę pracujących, wynik finansowy oraz udział w PKB. W świetle zaprezentowanych wyników zaobserwowano dynamiczne zmiany na rynku usług TSL w Polsce w zakresie analizowanych zmiennych. Zmiany te odzwierciedlają wahania kondycji polskiej gospodarki – okresy ożywienia i dekonjunktury gospodarczej, co potwierdza założenie o nośnym charakterze usług TSL dla gospodarki krajowej.

Słowa kluczowe: rynek usług TSL, system nośny gospodarki, system wspomagający gospodarkę

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CLUSTER INTERNATIONALIZATION – A KEY COMPONENT FOR THE DEVELOPMENT AND COMPETITIVENESS OF CLUSTER MEMBERS

Cluster internationalization can help businesses, especially small and medium enterprises (SMEs), to improve their competitiveness and accelerate their presence in global value chains. This point of view is often represented by cluster managers, researchers or politicians. However, the urgent need for internationalization of cluster enterprises is disproportionate to the state of understanding of the mechanisms and the effects arising from international cluster cooperation.

The first part of this article includes a review of the literature which aims to assess the state of knowledge on the internationalization of clusters and cluster enterprises. Importantly, a new cluster model has been presented – the so-called "born global" clusters, for which internationalization is the main strategy of development. The empirical part of the paper comprises the results of cluster benchmarking in Poland in 2014. Despite the fact that the results present internationalization as a key area of cluster development, further detailed analysis of the sub-indices expands this view. To conclude, the theme of cluster and cluster enterprise internationalization is relatively new and requires further research. The understanding of the determinants, the mechanisms and the effects of internationalization will allow to better fit cluster policy and management instruments at the level of regions as well as the European Union.

Keywords: cluster, management, strategy, internationalization, development, competitiveness

1. INTRODUCTION

The European economy is facing many challenges. These include, inter alia, the need to maintain an appropriate pace of development in relation to the Asian and American economies, to achieve a high degree of competitiveness of its own companies, mainly in the SME sector, as well as to meet the globalization processes, revealing the power of transnational corporations (TNC's). One way to answer these challenges is to increase the internationalization of enterprises. On the other hand, due to the nature and the potential of the above said small and medium-sized enterprises, it is believed that the best way for their foreign expansion is the internationalization of clusters.

The evolution of the importance of clusters internationalization can be seen within the M. Porter's approach³. In his first theoretical (conceptual) framework, he defines clusters

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as “geographic concentrations of interconnected companies, specialized suppliers, service provider, firms in related industries, and associated institutions in particular fields that compete but also co-operate”⁴. The main advantage of clustering is essentially that geographic proximity facilitates networking between key drivers (rivalry and strategy, demand conditions, related and supporting industries and factor input conditions) and reduces the transactions costs imposed by distance. Then in his next work, M.E. Porter argues that globalized economic interactions mitigate disadvantages rather than create advantages. In his opinion distant sourcing is second-best solution compared to accessing a competitive local cluster in terms of productivity and innovation⁵. Given that globalization has changed and reduced the importance of traditional localized factors of production, it influenced Porter's opinion. In his more recent works he argues that it is primarily export oriented clusters that drive regional prosperity⁶, which manifests itself, inter alia, in paying higher wages than clusters serving purely local markets. While the earlier version of the cluster hypothesis had much in common with traditional agglomeration economy theory, this latest version of the cluster hypothesis has much in common with traditional export base theory. The export base clusters are important not just for their local supply-side characteristics but also because of their international demand-side linkages. From this perspective, export and trade bring external knowledge into innovation processes of a cluster and a region.

As shown above, the concept of cluster internationalization is a relatively new issue in economics. On the other hand, thorough the understanding of this phenomenon, it is not only urgent, but also important in the long term development of clusters and their competition on the international stage. Hence, a number of studies are conducted to gain better insight into the advancement of the internationalization processes in clusters, operating mechanisms and effects achieved at the level of cluster enterprises. The base of presented scientific considerations were the following research questions:

- how it should be understood the clusters internationalization?
- how clusters can increase the level of its internationalization?
- what are the benefits of internationalization for clusters and their members?
- to what extent Polish clusters are internationalized?
- what affects the degree of internationalization of Polish clusters?

Therefore, the key purpose of the article is to examine the importance of cluster internationalization in both theoretical aspects, and primarily, in relation to the results obtained by the clusters, illustrated with the example of the polish market in 2014. The

³J. Simmie, *The contribution of clustering to innovation: from Porter I agglomeration to Porter II export base theories*[in:] *Handbook of Research on Innovation and Clusters. Cases and Policies*, ed. Ch. Karlsson, Edward Elgar Publishing Ltd, Northampton 2008, p.27.

⁴M.E. Porter, *On Competition*, Harvard Business School Press, Cambridge 1998, p. 197.

⁵ Clusters represent a new way of thinking about national, state, and local economies, and they necessitate new roles for companies, for various levels of government, and for other institutions in enhancing competitiveness. It represent a kind of new spatial organizational form in between arm's-length markets on the one hand and hierarchies, or vertical integration, on the other. M.E. Porter, *Location, competition and economic development: local clusters in a global economy*, “Economic Development Quarterly”, Vol. 14, No.1, February 2000, p. 15-34.

⁶ The performance of regional economies is strongly influenced by the strength of local clusters and the vitality and plurality of innovation.. M.E. Porter, *The economic performance of regions*, “Regional Studies”, Vol.37, No. 6-7, August-October 2003, pp. 549-578.

results of the study "Cluster Benchmarking in Poland - Edition 2014" carried out by the Polish Agency for Enterprise Development will be presented. Research methodology will be discussed in detail and the results will be interpreted in terms of internationalization. This is particularly important as the group of respondents included not only cluster managers, but also the cluster members.

2. CLUSTER INTERNATIONALIZATION: THE NEED OR CHALLENGE?

The development of clustering in EU is conducive to the creation of competitive, dynamic, knowledge-based economy, which is capable of permanent development, creates a larger number of workplaces and is characterized by social cohesion. Clusters consist of groups of independent and informally connected firms and institutions, capable of achieving operational efficiency and flexibility at the global level⁷. This new form of organization focuses on connections and interdependencies between the participants along the value added chain in the production, and innovations permanently stimulate investments and specialization⁸. Drawing on the research, M. Porter repeatedly indicates that there are four major examples of benefits that ensue from locating and running a business in a cluster environment, these are⁹:

- location within a cluster provides the firm with superior or lower costs access to specialized inputs, such as components, machinery, business services and personnel, compared to vertical integration;
- location within a cluster also provides a firm with superior access to all kinds of information (technical and/or marketing);
- cluster location can provide a firm (or a group of firms) with a number of "marketing complementarities," such as firm referrals, joint trade participation, and joint marketing delegations;
- cluster location often facilitates firm's access to institutions and public goods that otherwise would not be easy or cheap to access.

Only excellent clusters (which sometimes are also referred to as regional networks) that can compete and grow in the global economic environment can meet the expectations of policy makers and cluster stakeholders¹⁰. Therefore, contemporary clusters are forced to strengthen their competitiveness continuously, not only through internal but also external development. One of the possible ways within this scope is internationalization, which requires flexibility and efficiency in building relationships with foreign entities.

The fact that cluster internationalization becomes more and more significant ensues not only from the processes of globalization of the world economy and European Integra-

⁷ M.E. Porter, *Location, competition ...*, op. cit., pp. 15-34; A.M. Kowalski, *The role of innovative clusters in the process of internationalization of firms* "Journal of Economics, Business and Management", Vol. 2, No. 3, 2014, p. 182.

⁸ P. Strukelj, S. Dolinsek, *Internationalization of R&D in two high-tech clusters and cooperation of R&D units in those clusters*, "Journal of Industrial Engineering and Management", No. 3, Vol. 2, 2010, p. 299.

⁹ M.E. Porter, *Location, competition ...*, op. cit., p. 19; D. Reid, R. DeMartino, S.C. Zyglidopoulos, *The internationalization journey of a high-tech cluster*, "Thunderbird International Business Review", Vol. 47 (5), 2005, p. 533.

¹⁰ T. Lämmer-Gamp, G. Meier zuKöcker, T. Christensen, *Clusters are individuals. Creating economic growth through cluster policies for cluster management excellence*, The Danish Agency for Science Technology and Innovation, Copenhagen 2011, p.11.

tion, including the changes concerning the conditions of transferring resources, liberalization of international trade and specialization of the value chains, but also from the fact that cluster structures constitute a successful means of attracting foreign investments. More and more frequently, foreign investors are interested in localizing their investments in industrial clusters, as they have a positive impact on the innovativeness of cluster members (e.g., enterprises) owing to the fact that heightened mobility of resources (principally people, capital, and information – including intellectual property), the development of durable relationships and new technologies in high-tech sectors are created by units located in close proximity to each other¹¹. Gradual increase in the involvement of foreign entities in local or regional clusters can result in the valorisation of the available resources, knowledge diffusion, diversification of production and the development of supply chains, including the intensification of the development processes and cluster internationalization.

Cluster internationalization develops in quantitative and qualitative dimensions, inter alia, as a sign of “clustering of clusters”. In theoretical approach, the notion of cluster internationalization is of interdisciplinary nature and, most frequently, is understood as:

- sequential and gradual involvement of a cluster in the activity on foreign markets, stable interaction of a broad spectrum of interrelated, interdependent, and mutually complementary stakeholders localized on a territory of two or more countries¹²;
- the creation and development of the network of relations with a wide group of entities, including the concentration of cluster activity on the work that is connected to its key competences and outsourcing the realization of the remaining functions and processes to the foreign partners¹³;
- the process of increasing cluster’s involvement in international business activity, comprising active internationalization forms (export, FDI, capital and non-capital cooperation, networks) and passive ones (import, purchasing licenses, supplies for exporting companies, cooperation with foreign firms), the intensity, scope and forms of which depend on the adopted development strategy, including internationalization strategy¹⁴.

Presently, many researchers emphasize, that from the standpoint of the classical approach on the effects of globalization with regard to regional clusters, internationalization is seen as an exogenous factor that has a critical impact on the development and growth of the cluster (i.e. the organic cluster) at a certain stage of its life cycle¹⁵. According to A. S. Mikhaylov and A. A. Mikhaylova¹⁶, the internationalization is typical of the emergence phase of an international cluster, where concerted cluster policy is aimed at creating a globally oriented (i.e. born global) development strategy of regional institutions of two

¹¹A.M. Kowalski, *The role of innovative clusters ...*, op. cit., p. 184.

¹² A.S. Mikhaylov, A.A. Mikhaylova, *Geographies of cluster internationalization: interorganizational linkages on the Baltica*, “International Journal of Econometrics and Financial Management”, Vol. 3, No. 1, 2015, p. 38.

¹³ A. Colovic, O. Lamotte, *The role of formal industry clusters in the internationalization of new ventures*, “European Business Review”, Vol. 26, Issue 5, 2014, pp. 449-470.

¹⁴ K. Przybylska, *Proces internacjonalizacji przedsiębiorstwa w teorii ekonomicznej*, Zeszyty Naukowe Wyższej Szkoły Ekonomicznej w Bochni, No. 3, 2005, p. 73.

¹⁵P.H. Andersen, *Regional clusters in a global world: production, relocation, innovation and industrial decline*, “California Management Review”, Vol. 49, Issue 1, 2006, pp. 101-122; A.S. Mikhaylov, A.A. Mikhaylova, *Geographies of cluster ...*, op. cit., pp. 32-37.

¹⁶A.S. Mikhaylov, A.A. Mikhaylova, *Geographies of cluster ...*, op. cit., p. 33.

or more interacting countries in the framework of international cluster initiative (ICI). Clusters are subject to internationalization at two levels¹⁷: the micro level (the level of firms taking part in clusters) and the meso level (the cluster as a whole) – through the actions undertaken by cluster coordinators, which work for establishing cooperation at the international level. Thus, cluster internationalization is of dual nature, as it occurs inside a cluster – at the level of behaviour of its particular members, and simultaneously it concerns the entire cluster, mainly due to the activity of the cluster coordinators (cluster organizations). Taking into consideration the active role of cluster organizations in the process of entering foreign markets, as well as the scope of passive internationalization, cluster internationalization can be achieved through, e.g.¹⁸:

- the creation of formal and informal cooperation platforms, networks of relations between clusters and other foreign stakeholders,
- selective relocation, where particular cluster members move their business to other, foreign locations,
- the realization of common R&D projects within the scope of international consortium,
- common purchasing on foreign markets,
- the organization of common distribution channels on foreign markets,
- the cooperation with foreign partners (subcontracting).

For example, there are several different ways to classify the networks relevant to cluster internationalization¹⁹: collaboration networks for cluster organizations e.g. European Cluster Managers Club, Europa Inter Cluster; collaboration networks for cluster policy makers e.g. European Cluster Alliance, The Competitiveness Institute; innovation networks for policy makers e.g. ERRIN, Eurada, Taftie; industry specific networks mainly for cluster organizations e.g. European Aerospace Cluster Partnership, European Automotive Strategy Network; geographically specific networks within Europe, e.g. BSR Stars (Baltic Sea Region), cluster group within EUSDR (European Strategy for the Danube Region); international networks outside Europe, e.g. EU-Japan, Euro-Med Innovation network, etc.

The increase in the scope of the internationalization of economy, markets and the supply base is accompanied by a systematic growth in the level of cluster internationalization. The observable changes within this scope are frequently perceived as a sign of logical consequence of pro-growth activities in this type of organizations. As far as the level of localization is concerned, all international clusters can be divided into two groups²⁰:

- the transnational cluster is an international cluster, the participants of which are concentrated as a rule in non-bordering regions of two or more countries; this cluster can comprise both a wide range of independent stakeholders and individual regional clusters;

¹⁷ A.M. Kowalski, *The role of innovative clusters ...*, *op. cit.*, p. 184.

¹⁸ B. Jankowska, *Internacjonalizacja klastrów*, „Gospodarka Narodowa”, No. 5-6, 2010, p. 23.

¹⁹ B. Greenhalgh, *Cluster internationalization handbook*, Manchester Metropolitan University, Manchester 2012, p. 31.

²⁰ A. Mikhailov, *Development of international clusters in the Baltic Sea Region*, “Baltic Region”, No. 1, Vol. 15, 2013, p. 38.

- a transboundary cluster is also an international cluster; however, its members are localized in the border regions of neighbouring countries.

However, what is crucial for the process of internationalization is that the decision-makers who manage this organization strategically formulate a proper internationalization strategy. They also have to implement this plan efficiently, as to make the final level of internationalization appropriate to the current and future needs of a cluster. Internationalization strategy must be cohesive with the internationalization strategy of its members, mainly enterprises.

While characterising the strategy of the internationalization of cluster companies, M. Gancarczyk emphasizes that whereas cost-oriented strategies assume the establishment of hierarchical relations, characterized by the subordination of the cooperants and one-way knowledge transfer, differentiation-oriented strategies assume the creation of heterarchical relations, which ensure the use and the development of knowledge²¹.

As any other economic process, the internationalization process involves certain risks and uncertainty, stimulated by the underestimation of the costs and the uncontrollable international environment²². Therefore, the risk that determines the final effects of cluster activity can have a positive or a negative dimension. Thus, contemporary clusters in various ways adjust their activities to the “double nature” of the risk. Whereas some of them still concentrate on continuous risk avoidance or minimization, others take risk intentionally, and entrepreneurially manage on the market. Ch. Richardson and M. Yamin suggest that the potential positive and negative impact of clustering on internationalization is characterized by²³:

- positive impact (e.g., the access to ‘sticky’ knowledge through cluster networks/relationships, observation/imitation, inter-firm labour mobility, access to specialized labour pools, access to industry – specific inter-mediate inputs and services, access to venture capitalists, technology spill-overs, association with cluster’s ‘brand name’, higher chance of being ‘found’ by international contacts, etc.);
- negative impact (e.g., localized congestion, intense localized competition, distrust among the members, overdependence on region – specific resources, ‘poaching’ of workers by other cluster firms, loss of technological advantage due to imitation/technology spill-overs, etc.).

Additionally, cluster managers also underline that positive aspects of inter-cluster cooperation in international space include: greater strength in lobbying, co-promotion (promotion at the international level), the possibility of exchanging the information regarding cluster-based policies in different countries, forwarding obtained knowledge to local authorities and to other clusters, exchanging the experience and good practices²⁴. The progressive development of clusters’ international cooperation may also enable the access to

²¹M. Gancarczyk, *Strategie internacjonalizacji przedsiębiorstw w klastrach* [in:] *Międzynarodowe stosunki gospodarcze – internacjonalizacja i konkurencyjność międzynarodowa*, ed. T. Sporek, Wyd. Uniwersytetu Ekonomicznego w Katowicach, Katowice 2012, p. 132.

²²F. Stremtan, S.S. Mihalache, V. Pioras, *On the internationalization of the firms – from theory to practice*, “Annales Universitatis Apulensis Series Oeconomica”, Vol. 11, No. 2, 2009, p. 1030.

²³Ch. Richardson, M. Yamin, *The impact of industrial clusters on internationalization: the case of SMEs in Malaysia’s Multimedia Super Corridor* [in:] *The process of internationalization in emerging SMEs and emerging economies*, ed. H. Etemad, Edward Elgar Pub, Northampton 2013, p. 354.

²⁴M. Bialic-Davendra, *An investigation of a new concept of world-class clusters in Europe – a case study of the Visegrad Group of Countries*, “Journal of Competitiveness”, Issue 2, 2011, p. 53.

specialized and advanced resources, intellectual capital (know-how, qualified work force, partnerships with key clients and/or suppliers), access to specialized, high quality services and infrastructure, to innovative branches in the industry in which cluster operates and also the proximity to competitors (which, e.g., influences pressure on innovations), etc.²⁵. Moreover, A.S. Mikhailov considers that the formation of industrial clusters at an international level is an efficient mechanism for the innovative development of periphery regions of the countries involved in a cluster interaction²⁶.

Industrial clusters comprise many resources (tangible and intangible resources) that cluster firms (mainly small and medium-sized companies) may leverage to initiate and accelerate their internationalization activities²⁷. Cluster externalities have a positive impact on the internationalization process of the cluster firms and the reputation of cluster members. Cluster reputation assists the internationalization process of enterprises (mainly SMEs) in at least three ways: by reducing the legitimating expenses required by a new firm; by allowing a firm to charge premium prices and position itself on the higher end of its respective market; and by facilitating the finding (or the “being found”) by current and future customers²⁸.

On the basis of their own research, A. S. Mikhaylov and A. A. Mikhaylova indicate that the formation and the development of internationally organized clusters is a long and complex process that requires countries to have a strong innovative capacity, globally competitive economy, as well as a significant amount of annual investments in the sphere of science and education and for supporting international cluster initiative and international clusters that are already formed²⁹. International cluster competitiveness is presently considered the key element of the maintenance and further development of global competitiveness of EU economy. Thus, various stakeholders undertake a number of initiatives to create the so-called meta-clusters by means of the fusion of clusters, to strengthen innovativeness and competitiveness of the entire EU economy, including national economies.

3. 'BORN GLOBAL' TYPE OF CLUSTER INTERNATIONALIZATION

The concept of a cluster of born global type is still a relatively new one, and has not been thoroughly discussed in economic literature. Clusters of born global type are defined taking into account the activity of a cluster as a certain entirety (organization) within the scope of internationalization, as well as taking into consideration the activity of entrepreneurs themselves (cluster members). A defining characteristic of a born global is its accelerated internationalization³⁰. It ensues from the research conducted on cluster development that a number of clusters, particularly the innovative, high-tech and knowledge-based ones, fail to follow a typical path of gradual, evolutionary process of internationalization, as they initiate their activity on foreign markets right from the beginning of their existence. Frequently, the international or even global market is for them one of the major

²⁵Ibidem, p. 44.

²⁶A. Mikhailov, *Development of international ...*, op. cit., p. 37.

²⁷D. Libaers, M. Meyer, *Highly innovative small technology firms, industrial clusters and firm internationalization*, “Research Policy” No. 40, 2011, p. 1427.

²⁸D. McHardy Reid, R. DeMartino, S.C. Zyglidopoulos, *The internationalization journey ...*, op. cit., p. 544.

²⁹A.S. Mikhaylov, A.A. Mikhaylova, *Geographies of cluster ...*, op. cit., p. 36.

³⁰J. Weerawardena, G.S. Mort, P.W. Liesch, G. Knight, *Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective*, “Journal of World Business”, Vol. 42, 2007, p. 294.

supply and sell markets. Sometimes, these clusters evince slightest or none interest in a national market. They specialize in manufacturing a certain product which distinguishes itself amidst the competition, and which is aimed at the sale on large, absorbent markets of highly developed countries. In the case of such clusters, high activity within the scope of internationalization is manifested by the members themselves, mainly entrepreneurs, who:

- initiated internationalization (including export and import activities) not later than 3 years after entering a national market and who are export-oriented – at least 10% of export³¹;
- by means of quick internationalization with substantial amount of international operations; they rest on various options to access sources, seek to found local advantages in host markets and monitor unique capabilities in order to create and coordinate value chains on international basis, become extensive export and/or import start-ups, become region specific businesses and global actors³²;
- develop relatively fast on foreign markets and have exceptional skills, key competences in international business, which can be observed in the improvement of economic results right from the moment of their creation³³;
- plan their businesses basing on global strategic perspectives; they look globally, and use global opportunities when suitable³⁴.

It has to be emphasized that these entrepreneurs, owing to strategic cooperation within a business network (cluster), use common resources, including knowledge and experience of other partners. Thinking strategically, they efficiently use market chances, support the development of new, innovative goods and services, and actively take risk connected to entering new foreign markets. They continuously win new customers and acquire knowledge on new markets owing to the development of innovative ICT³⁵. Generally, it can be assumed that clusters of born global type are business organizations that:

- from inception, seek to derive significant competitive advantages from the use of resources and the sale of outputs in multiple countries³⁶;
- have achieved international operations within a few years of its establishment through the application of knowledge-based resources to the sale of outputs in multiple countries and the combination of input resources from multiple countries, including those located beyond the firm's domestic continent³⁷.

³¹ L. Zhou, W. Wu, X. Luo, *Internationalization and the performance of born-global SMEs: the mediating role of social networks*, "Journal of International Business Studies", Vol. 38, 2007, pp. 673-690.

³² A. Gökmen, D. Temiz, *Born global firms: a foreign trade related study on Turkey*, "Eurasian Journal of Business and Economics", Vol. 6, No. 12, 2013, p. 130.

³³ G.A. Knight, S.T. Cavusgil, *Innovation, organizational capabilities and the born-global firm*, "Journal of International Business Studies", Vol. 35, 2004, pp. 124-141.

³⁴ J.S. Engel, I. del-Palacio, *Global networks of clusters of innovation: accelerating the innovation process*, "Business Horizons", Vol. 52, Issue 5, 2009, p. 497.

³⁵ K. Przybylska, *Born global: a new generation of small polish businesses*, "Gospodarka Narodowa", No. 7-8, 2010, p. 71.

³⁶ B.M. Oviatt, P.P. McDougall, *Toward a theory of international new ventures*, "Journal of International Business Studies", Vol. 25, No. 1, 1994, p. 49.

³⁷ L. Altshuler, *Competitive capabilities of a technology born global*, Lund Business Press, Lund Institute of Economic Research, Lund 2012, p. 29.

From the viewpoint of the development strategy of this type of clusters, there can be observed a global orientation and high-level professionalism of cluster managers in international business right from the beginning of their existence. In clusters of born global type, the owners and managers of companies, leaders and cluster managers perceive world as a market without borders³⁸. Contemporary possibilities of the development of European born global clusters are related, inter alia, to market openness and deregulation, the development of knowledge-based economy, the EU's orientation towards the development of economic networks, including knowledge transfer, technology and innovation in the competitive European area; and they constitute a new challenge within the scope of broader analysis of theoretical and practical dimension of cluster internationalization.

4. CLUSTER INTERNATIONALIZATION – SELECTED RESULTS OF THE CLUSTER BENCHMARKING IN POLAND (EDITION 2014)

The benchmarking of Polish clusters is an example of cyclical research on the development of clusters in Poland and their internal transformation, which has already been conducted three times by the Polish Agency for Enterprise Development (PAED). It is an effective cluster policy tool which allows the identification of good practices in cluster management, the most effective methods for conducting joint operations within the cluster by comparing the activity of a particular cluster with others, including the model (benchmark) ones. The key objective of cluster benchmarking in Poland includes³⁹: providing clusters with a useful tool to improve their operations, gather knowledge and learn, demonstrating the best solutions and practices applied in Polish clusters, indicating recommendations regarding cluster support policy to be implemented both on the country (central authorities) and regional/local level, providing recommendations for other entities that support clusters and cooperate with them, in particular R&D institutions, innovation and enterprise support centers, collecting knowledge on the current cluster development stage in Poland and internal processes carried out in clusters, promoting the idea of clustering in Poland.

The first study of this kind was conducted in 2010 (on a sample of 47 clusters), the next in 2012 (a sample of 35 clusters) and 2014 (a sample of 35 clusters)⁴⁰. In each edition

³⁸ G.A. Knight, S.T. Cavusgil, *A taxonomy of born-global firms*, "Management International Review", Vol. 43, Issue 3, 2005, p. 15.

³⁹ Deloitte Business Consulting, *Benchmarking klastrów w Polsce – 2010. Raport z badania*, PARP, Warszawa 2010, p. 210.

⁴⁰ Third edition survey was conducted among 35 clusters based on a dedicated methodology developed in 2008 and then modified by a team of experts in 2010 and 2012. Out of this group, 31 clusters were involved in the 2012 survey and 20 in the 2010 survey. The clusters qualified for the study included mainly the ones which had participated in previous studies, and in particular in the second cluster benchmarking study carried out in 2012. The remaining 4 clusters which were to complement the sample were selected on the basis of the following criteria: specific form of business; concentration around a dominant industry and geographic concentration; durability of cooperation; involvement in common initiatives - implementation of common projects and existence of common value chain links between enterprises/other entities operating in the cluster; diversity of entities making up the cluster (companies, representatives of the R&D and academic sector, public authorities, support institutions); cluster having its own development strategy. Clusters have been benchmarked in four key areas: cluster resources, processes in a cluster, cluster performance, and growth potential, as well as 15 sub-areas in the framework of these areas. B. Plawgo, *Benchmarking klastrów w Polsce – edycja 2014. Raport z badania*, PARP, Warszawa 2014, pp. 7-8; Deloitte Business Consulting, *Benchmarking klastrów ...*, *op. cit.*, pp. 12-23, 114-120; J. Hołub, *Benchmarking*

of the survey, the scale of assessment for particular areas/sub-areas was extensive (1-10, where 1 is the lowest rating and 10 – the highest rating). The final assessment, based on an individual in-depth interview with cluster managers, was conducted via a standardized questionnaire by an expert in the field of clustering (a research team member).

One of the major sub-areas in the course of benchmarking studies was the level of cluster internationalization. In this sub-area the research had focused on the identification of standard parameters such as:

- the number of foreign markets (countries) on which cluster enterprises are present,
- the share of exports in the structure of sales in the cluster core,
- the number of formal cooperation agreements between the cluster and foreign entities.

Additionally, in 2010 that sub-area included also participation in trade fairs, international exhibitions, cluster's trade missions in the preceding 2 years and a number of publications in a foreign language (industry materials, press) in the preceding 2 years. The third edition of the survey in 2014, in addition to the three standard indicators, included the number of international networks/projects (thematic, industry-related) to which the cluster belongs.

Based on clusters' average results obtained in 2014, in this sub-area one can conclude that the best rated were the shares of exports in the structure of sales in the cluster core (3.5 on average), slightly less rated: the number of foreign markets (countries) in which cluster enterprises are present (2.5 on average), the number of international networks/projects to which the cluster belongs (2.2 on average). Definitely, one of the major weaknesses of most of the surveyed clusters was their activity in the field of establishing formal cooperation agreements with foreign entities (only 0.5 on average). In the analyzed sub-area of cluster activity, it was easy to observe significant differences in the results of this activity. For example, in 2014⁴¹:

- model (benchmark) cluster's enterprises operated on 100 markets, while the average for an individual cluster was 27;
- the maximum value of exports in the structure of sales was 90% (benchmark value), with the average for clusters at 35%;
- model (benchmark) clusters had a total of 67 agreements concluded with clusters around the world, whereas an individual cluster in the sample concluded the average of nearly 5 agreements of this kind, 11 clusters at the time of the study failed to have a single contract concluded with a foreign entity;
- the surveyed clusters participated in a total of 68 networks/international projects, with an average of 2, maximum - 8, minimum - 0 (as many as 9 clusters).

It ensues from the results that the varied level of cluster internationalization may facilitate exchange of knowledge and experiences among cluster members on specific foreign markets, as well as contribute to a more active international expansion, especially of those clusters which have operated so far on a limited number of markets.

klastrów w Polsce – edycja 2012. Raport z badania, PARP, Warszawa 2012, pp. 13-18, 117-122; A. Nowakowska, Z. Przygodzki, M. Sokołowicz, J. Chądzyński, K. Matusiak, M. Klepka, *Benchmarking klastrów: opracowanie i opis metodyki benchmarkingu klastrów w Polsce*, PARP, Warszawa 2008.

⁴¹ B. Pławgo, *Benchmarking klastrów ...*, *op. cit.*, pp. 112-121.

In the third edition of the survey in 2014 an essential complement to the research methodology was to obtain members' views of the surveyed clusters during Computer-Assisted Web Interviews (CAWI) and Computer Assisted Telephone Interviews (CATI). This survey aimed to evaluate the quality of cluster management and the ultimate effects of the functioning of these structures from the perspective of their members (mainly enterprises). The study involved 618 members selected from 1917 members from all 35 Polish clusters surveyed.

For the assessment of the impact of cluster participation on cluster internationalization there were invited 513 selected entrepreneurs (representatives of 238 micro-, 143 small-, 91 medium-sized and 41 large enterprises). In this sample, there was noticed a very strong diversity of entities as to the business area. The quantitative majority of entities was engaged in both domestic and foreign markets (especially the EU). For 43 enterprises the main ones were the markets of EU members, and for 16 – foreign markets outside the EU. A vast majority of them assessed the coordinator's activity (cluster organization) very positively as to the support of the expansion of cluster enterprises to foreign markets, e.g. through the organization of trade missions, the transfer of information, participation in trade fairs abroad. Nearly 70% of the managers of the surveyed clusters considered the increase of the level of internationalization and international competitiveness of the cluster as a priority in terms of their strategic objectives for development. Moreover, during the study it was found that:

- 15% of respondents conducted research and developed in cooperation with foreign partners (non-members of the cluster);
- 37% of respondents participated in international economic events organized for the members of the cluster (e.g. trade fairs, exhibitions or other events);
- 32% of respondents felt that in the preceding two years they continued to introduce products/services into international markets;
- 28% of respondents gained new international markets in the preceding 2 years;
- 30% of respondents increased revenues from export.

These results indicate a moderate level of internationalization of the surveyed clusters. This certainly stems from the fact that, firstly, 8 of the surveyed clusters operated only from 2007, 7 - from 2008, 3 - from 2009, 3 – 2010, 7 - 2011, i.e. a vast majority of them had less than four-year experience in the operation on the market in a more or less formal structure. Secondly, the structure of cluster enterprises was dominated by micro-enterprises (44%) and small businesses (32%). Large enterprises, which generally have a wider range of activities on the domestic and international markets, accounted for only 6% in the analyzed structure of the enterprises within the surveyed clusters.

Not all participants expressed willingness to answer the question of whether participation in the cluster had positive influence on the introduction of another product/service into a foreign market. Of the 151 entrepreneurs who provided this reply, 59% felt that the influence was very small, while only 14% said it was large and very large. It was also difficult for the respondents to determine the influence of their current participation in the cluster on gaining new international markets. Of the 137 entrepreneurs who gave this reply, 62% felt that the impact was negligible, while only for 23% of them it was significant.

In most cases the respondents were not able to accurately assess the influence of participation in the cluster on the introduction of another product/service into the internation-

al market, on attracting new foreign markets or increasing revenues from export activities. This area rated only approximately 30% among the respondents. The research shows that the more mutual are the projects within a cluster, the higher is also their activity on international markets and higher assessment of the impact of participation in a cluster on the process of internationalization. In addition, in this regard, the phase of cluster live cycles and size of the cluster were both important⁴² (Table 1).

Greater experience of clusters, associated with the growth/maturity phase translated into their much better performance in the respective ratios of internationalization. What is more, big clusters (over 61 members) operated on the largest number of foreign markets and in the largest number of international networks or projects in relation to other clusters. On the other hand, the managers of large clusters fail to show high activity in search for new foreign partners for cooperation (business environment institutions, clusters, etc.), which seems highly puzzling. Perhaps this is due to the fact that most of cluster managers first focused on the improvement of the internal processes in clusters, and only later on developing a network of relationships in the international areas.

Table 1. The average cluster internationalization rate depending on the number of members

Factor	Up to 28 members	29-60 members	over 61 members
Number of foreign markets (countries), on which cluster enterprises are present	2,1	1,8	3,4
Share of exports in product sales structure within the cluster core	4,2	3,0	3,6
Number of international networks/projects, in which the cluster operates	1,3	1,3	3,7
Number of formal cooperation agreements between the cluster and foreign entities	0	0,1	1,1
Average for the surveyed clusters	1,7	1,4	2,7

Source: own elaboration based on: B. Plawgo, *Benchmarking klastrów ...*, op. cit., pp. 119, 219-221.

The cluster internationalization is usually assessed in two aspects: firstly, in terms of the activity of cluster members in international markets, and, secondly, in terms of the activity of cluster coordinators on these markets, acting on behalf of the cluster. The research shows that a significant percentage of respondents fail to fully explore the opportu-

⁴² In order for every group to be represented evenly two sections were created: 1-3 years and 4 years and more ("younger clusters" and "older clusters"). The first group was made up of 10 clusters whereas the second one (4 years or more) consisted of 25 clusters. The assumed criterion allows to specify the level at which e.g. the experience in cooperation translates into the results achieved by a cluster. The phase of development criterion used in the previous edition of the benchmarking study (2012) was abandoned, since according to the rules of classification applied at that time all the clusters analyzed in this edition would get into one group (growth/maturity phase). B. Plawgo, *Benchmarking klastrów ...*, op. cit., p. 16.

nities provided by the possibility of wider cooperation with clusters and other networks, operating in different parts of Europe and the world. Simultaneously, nearly half of respondents expect clusters and cluster organizations to develop activities for the sake of the expansion of cluster enterprises on foreign markets. Given that, clusters create an entrepreneurial ecosystem permanently stimulating their level of internationalization; what is also important are further improvements of cluster management processes.

5. CONCLUSIONS

One way to achieve higher degree of economic competitiveness is to increase the internationalization of enterprises. The fact that cluster internationalization becomes more and more significant ensues not only from the processes of globalization of the world economy and European Integration, but also from the fact that cluster structures constitute a successful means of attracting foreign investments.

The cluster internationalization occurs in two dimensions: the internationalization of the cluster as an organization and the internationalization of enterprises as cluster members. As mentioned before, there has been observed relatively high awareness of the need for internationalization at both levels. However, multiple factors affect the final actions undertaken on foreign markets and their effects. Potential benefits certainly include, among others, increase in sales, access to new markets, transfer of knowledge and know-how, enhanced competitiveness. Nevertheless, one must note that the activity in the international markets is burdened with a number of restrictions and threats. This applies in particular to clusters where the dominant group members are SMEs. In their case, a significant limitation is, among others, the need for greater involvement of employees and financial resources. Those are necessary to establish business contacts and ensure active participation in the international project. In addition, there occur differences language- and culture-wise, as well as within knowledge of foreign markets and their legal and economic conditions.

The benchmarking of Polish clusters conducted by the Polish Agency for Enterprise Development, as cyclical research on the development of clusters in Poland is an important policy tool which allows the identification of good practices in cluster management processes, including cluster internationalization. Based on clusters' average results obtained in 2014 one can conclude that the best rated were the shares of exports in the structure of sales in the cluster core, the number of foreign markets on which cluster enterprises are present and the number of international networks/projects to which a cluster belongs. The major weaknesses of most of the surveyed clusters were their activity in the field of establishing formal cooperation agreements with foreign entities. The results show that clusters' operating time and a higher number of their members have a positive impact on cluster internationalization, along with the percentage of large enterprises, which have better potential to move into foreign markets.

On the other hand, it should be noted that the presented study ignores the division of clusters into sectors, or even into product/service industries. Meanwhile, it may be an important factor in the development of internationalization, as research shows, because of the fact that service companies have a greater ability to cooperate on foreign markets, due to lower costs, greater mobility, and thus greater flexibility. On the other hand, industrial companies are more capital-intensive, whereas the cooperation with foreign partners is associated with, for instance, high transport costs, which further increases the risk in-

volved. Therefore, the urgent need for internationalization of cluster enterprises is disproportionate to the state of understanding of the mechanisms and the effects arising from international cluster cooperation. To conclude, the concept of cluster internationalization is a relatively new issue in economics, therefore research in this area should be continued.

REFERENCES

- [1] Altshuler L., *Competitive capabilities of a technology born global*, Lund Business Press, Lund Institute of Economic Research, Lund 2012.
- [2] Andersen P.H., *Regional clusters in a global world: production, relocation, innovation and industrial decline*, "California Management Review", Vol. 49, Issue 1, 2006, pp. 101-122.
- [3] Bialic-Davendra M., *An investigation of a new concept of world-class clusters in Europe – a case study of the Visegrad Group of Countries*, "Journal of Competitiveness", Issue 2, 2011, pp. 43-57.
- [4] Colovic A., Lamotte O., *The role of formal industry clusters in the internationalization of new ventures*, "European Business Review", Vol. 26, Issue 5, 2014, pp. 449-470.
- [5] Deloitte Business Consulting, *Benchmarking klastrów w Polsce – 2010. Raport z badania*, PARP, Warszawa 2010.
- [6] Engel J.S., del-Palacio I., *Global networks of clusters of innovation: accelerating the innovation process*, "Business Horizons", Vol. 52, Issue 5, 2009, pp. 493-503.
- [7] Gancarczyk M., *Strategie internacjonalizacji przedsiębiorstw w klastrach* [in:] Międzynarodowe stosunki gospodarcze – internacjonalizacja i konkurencyjność międzynarodowa, ed. T. Sporek, Wyd. Uniwersytetu Ekonomicznego w Katowicach, Katowice 2012, pp. 125-134.
- [8] Gökmen A., Temiz D., *Born global firms: a foreign trade related study on Turkey*, "Eurasian Journal of Business and Economics", Vol. 6, No. 12, 2013, pp. 129-142.
- [9] Greenhalgh B., *Cluster internationalization handbook*, Manchester Metropolitan University, Manchester 2012.
- [10] Hołub-Iwan J., *Benchmarking klastrów w Polsce – edycja 2012. Raport z badania*, PARP, Warszawa 2012.
- [11] Jankowska B., *Internacjonalizacja klastrów*, „Gospodarka Narodowa”, No. 5-6, 2010, pp. 19-40.
- [12] Knight G.A., Cavusgil S.T., *Innovation, organizational capabilities and the born-global firm*, "Journal of International Business Studies", Vol. 35, 2004, pp. 124-141.
- [13] Knight G.A., Cavusgil S.T., *A taxonomy of born-global firms*, "Management International Review", Vol. 43, Issue 3, 2005, pp. 15-35.
- [14] Kowalski A.M., *The role of innovative clusters in the process of internationalization of firms*, "Journal of Economics, Business and Management", Vol. 2, No. 3, 2014, pp. 181-185.
- [15] Lämmer-Gamp T., Meier zu Köcker G., Christensen T., *Clusters are individuals. Creating economic growth through cluster policies for cluster management excellence*, The Danish Agency for Science Technology and Innovation, Copenhagen 2011.
- [16] Libaers D., Meyer M., *Highly innovative small technology firms, industrial clusters and firm internationalization*, "Research Policy" No. 40, 2011.
- [17] McHardy Reid D., DeMartino R., Zyglidopoulos S.C., *The internationalization journey of a high-tech cluster*, "Thunderbird International Business Review", Vol. 47, Issue 5, 2005.
- [18] Mikhailov A.S., *Development of international clusters in the Baltic Sea Region*, "Baltic Region", No. 1, Vol. 15, 2013, pp. 37-46.
- [19] Mikhaylov A.S., Mikhaylova A.A., *Geographies of cluster internationalization: interorganizational linkages on the Baltica*, "International Journal of Econometrics and Financial Management", Vol. 3, No. 1, 2015, pp. 32-37.
- [20] Nowakowska A., Przygodzki Z., Sokołowicz M., Chądzyński J., Matusiak K., Klepka M., *Benchmarking klastrów: opracowanie i opis metodyki benchmarkingu klastrów w Polsce*, PARP, Warszawa 2008.

- [21] Oviatt B.M., McDougall P.P., *Toward a theory of international new ventures*, "Journal of International Business Studies", Vol. 25, No. 1, 1994, pp. 45-64.
- [22] Plawgo B., *Benchmarking klastrów w Polsce – edycja 2014. Raport z badania*, PARP, Warszawa 2014.
- [23] Porter M.E., *On Competiton*, Harvard Business School Press, Cambridge 1998.
- [24] Porter M.E., *The economic performance of regions*, "Regional Studies", Vol. 37, No. 6-7, August-October 2003, pp. 549-578.
- [25] Porter M.E., *Location, competition and economic development: local clusters in a global economy*, "Economic Development Quarterly", Vol. 14, No.1, February 2000, pp. 15-34.
- [26] Przybylska K., *Proces internacjonalizacji przedsiębiorstwa w teorii ekonomicznej*, Zeszyty Naukowe Wyższej Szkoły Ekonomicznej w Bochni, No. 3, Bochnia 2005, pp. 73-92.
- [27] Przybylska K., *Born global: a new generation of small polish businesses*, "Gospodarka Narodowa", No. 7-8, 2010, pp. 63-84.
- [28] Reid D., DeMartino R., Zyglidopoulos S.C., *The internationalization journey of a high-tech cluster*, "Thunderbird International Business Review", Vol. 47 (5), 2005, p. 529-554.
- [29] Richardson Ch., Yamin M., *The impact of industrial clusters on internationalization: the case of SMEs in Malaysia's Multimedia Super Corridor* [in:] *The process of internationalization in emerging SMEs and emerging economies*, ed. H. Etemad, Edward Elgar Pub, Northampton 2013.
- [30] Simmie J., *The contribution of clustering to innovation: from Porter I agglomeration to Porter II export base theories* [in:] *Handbook of Research on Innovation and Clusters, Cases and Policies*, ed. Ch. Karlsson, Edward Elgar Publishing Ltd, Northampton 2008.
- [31] Stremtan F., Mihalache S.S., Pioras V., *On the internationalization of the firms – from theory to practice*, "Annales Universitatis Apulensis Series Oeconomica", Vol. 11, No. 2, 2009, pp. 1025-1033.
- [32] Strukelj P., Dolinsek S., *Internationalization of R&D in two high-tech clusters and cooperation of R&D units in those clusters*, "Journal of Industrial Engineering and Management", No. 3, Vol. 2, 2010, pp. 294-308.
- [33] Weerawardena J., Mort G.S., Liesch P.W., Knight G., *Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective*, "Journal of World Business", Vol. 42, 2007, pp. 294-306.
- [34] Zhou L., Wu W., Luo X., *Internationalization and the performance of born-global SMEs: the mediating role of social networks*, "Journal of International Business Studies", Vol. 38, 2007, pp. 673-690.

INTERNACJONALIZACJA KLASTRA JAKO KLUCZOWY CZYNNIK DLA ROZWOJU I KONKURENCYJNOŚCI CZŁONKÓW KLASTRA

Umiejdzynarodowienie klastra może pomóc przedsiębiorstwom, zwłaszcza MŚP w doskonaleniu ich konkurencyjności oraz przyspieszeniu ich obecności w globalnych łańcuchach wartości. Ten punkt widzenia jest często reprezentowany przez menedżerów zarządzających klastrami, naukowców i polityków. Jednak pilna potrzeba internacjonalizacji firm klastrów jest wciąż niewspółmierna w stosunku do stanu świadomości mechanizmów i skutków wynikających z międzynarodowej współpracy klastrów.

Pierwsza teoretyczna część tego artykułu zawiera przegląd literatury przedmiotu, który miał na celu ocenić stan wiedzy na temat umiejdzynarodowienia klastrów, w tym przedsiębiorstw klastrów. Co ważne w tej części zaprezentowano m.in. nowy model klastrów tzw. klastry globalne od powstania, dla których internacjonalizacja jest główną strategią rozwoju. Empiryczna część artykułu opiera się na wynikach badań benchmarkingowych klastrów w Polsce, jakie były realizowane w 2014 roku. Autorzy podkreślają, że internacjonalizacja klastrów, w tym ich członków jest wciąż zagadnieniem nowym i złożonym, przez co wy-

maga dalszych pogłębionych badań i analiz. Zrozumienie czynników, mechanizmów oraz finalnych efektów internacjonalizacji może pozwolić na lepsze dopasowanie instrumentów zarządzania klastrami i polityki klastrowej na poziomie regionalnym, jak i na poziomie Unii Europejskiej do potrzeb klastrów.

Słowa kluczowe: klaster, zarządzanie, strategia, internacjonalizacja, rozwój, konkurencyjność

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CREATIVE CLASS AND CREATIVE INDUSTRIES AS A MEANS OF RENEWAL OF THE CITY (CASE OF RZESZÓW)

Crisis is a universal phenomenon, manifesting itself at different stages of development of various entities or social structures. In the case of urban crisis, what is primarily essential is certain moment of its development, when current sources and directions of development get exhausted and new ones have not yet been formed. Urban renewal concerning cities suffering from crisis ensuing from deindustrialization has manifested itself in many forms - from comprehensive infrastructural investments, social programs, ending with attempts at reviving lost industry. Investing in culture proved to be a common trend and the most popular renewal strategy. Calling upon Richard Florida's creative class conception, one should note that reviving cities are especially attractive to representatives of creative class and, consequently, creative enterprises, etc. The term "creative economy" or "creative industries" relates to industry based on knowledge and intellectual property. Here, intellectual property constitutes the added values of scientific research (concerning new technologies) and cultural context of creative units which make up the human core of the industry. The creative industry has been defined based on DCIM instructions and translated into the currently binding Polish PKD system. Rzeszów has been described based on the number of workers employed by creative business entities (as well as their relation to all entities registered in the city). It can be noticed that employment in creative business entities, as well as the number of such entities has been constantly increasing.

Keywords: city crisis, city renewal, creative class, creative industry

1. INTRODUCTORY REMARKS

Crisis is a universal phenomenon, manifesting itself at different stages of development of various entities or social structures. In the case of urban crisis, what is primarily essential is certain moment of its development, when current sources and directions of development get exhausted and new ones have not yet been formed. According to Andrzej Majer, the term „urban crisis” was „initially a metaphor originated for the purpose of political rhetoric, aiming at labeling the problem of poverty and closing industries in cities using only one word”². Originally, urban crisis was understood as a synonym of financial limitations of urban systems which were unable to provide necessary means for improving living conditions of lowest social classes. With time, its meaning was evolving towards the results of disproportions relating to political system: excessive consumption of the wealthier part of societies, together with lack and failure to fulfill fundamental needs of others, increasing poverty and unemployment as well as degradation of city areas as a

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² Majer A. 2014. Odrodzenie miast. Łódź: Wydawnictwo Scholar : 34.

result of abandonment and negligence³. New meaning of urban crisis (or even regional crisis) is owed to transformations caused by deindustrialization and economic globalization which worked as a catalyst of this process. American cities of the North started to suffer from initial processes of this type as early as in 1960's, they witnessed decrease in employment and their inhabitants emigrated from the centers into far suburban areas or even away from cities⁴. Cities of Central-Eastern Europe did not undergo similar processes owing to their political-economical situation, however, their later system transformation resulted in accelerating the slow and systematic process as observed in the West to show exceptional burst. The crisis, precipitated by sudden deindustrialization and general decrease in employment, was accompanied by the region's marginalized role on the then-forming global market. The crisis of Central-Eastern Europe cities may be compared to the one suffered by cities of the West, even though it shows its own unique character. Municipal authorities and central administration responds to agglomeration crisis by taking up various actions aiming at overcoming it. Those actions may be called an attempt at urban renewal.

Urban renewal may be defined as „restoration of economic and social health of the city health”⁵. Urban Renewal is a proper name and it dates back to 19th century when „large scale reform attempts began to be called so - aiming at restoring cities' health, improving sanitary conditions and infrastructure”⁶. Urban Renewal was a response to the crisis caused by industrial revolution and extreme increase in urban population. The chaotic and aesthetically unacceptable infrastructure was one of the reasons why inhabitants of great agglomerations such as London, New York or Paris were alarmed. The attempts at clearing up the cities were concerned with urban regulations as well as aiding poor inhabitants, employees of factories who lived in terrible conditions and "moral decay". Renewal always follows some sort of a crisis. Sam Zielenbach differentiates between two main ways of acting. The first one is focused on people and is a part of social policy, aiming at improving living conditions of the most underprivileged social classes. The other one, referred to as „developers way” focuses on comprehensive exchanging and tidying of urban infrastructure, as well as making it more appealing (especially downtown districts)⁷.

Urban renewal concerning cities suffering from crisis ensuing from deindustrialization has manifested itself in many forms - from comprehensive infrastructural investments, social programs, ending with attempts at reviving lost industry. Investing in culture proved to be a common trend and the most popular renewal strategy. Thus, authorities concentrated on rebuilding the cultural position of cities believing they would regain their status thanks to restoration of monuments, gentrification of central and downtown districts, as well as animation of cultural life in a broad sense. Those strategies appeared parallel to creative cities, creative class and culture industry⁸.

³Beauregard R. 1993. *Voices of Decline: The Postwar Fate of U.S. Cities*. Oxford: Basil Blackwell.

⁴Savage M. Warde A. 1993. *Urban Sociology, Capitalism and Modernity*. New York: Continuum : 64.

⁵Holcomb H.B. Beauregard R.A. 1981. *Revitalizing Cities*. Washington: Association of American Geographers.

⁶Majer A. 2014. *Odrodzenie miast*. Łódź: Wydawnictwo Scholar : 30.

⁷Zielenbach S. 2000. *The Art of Revitalization. Improving Conditions of Distressed Inner-city Neighbourhoods*. New York-London: Taylor and Francis : 23-54.

⁸Załocki G. 2012. *Rozwój zrównoważony: idee, efekty, kontrowersje*. Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika : 53-54.

According to Andrzej Majer, „Europe adopted a certain standard of urban renewal schemes which today mostly agrees with the principles of new urbanism and intelligent development”⁹. The main ideas of contemporary Urban Renewal are based on creating the atmosphere of corresponding to modern capitalism, supporting economic, educational and cultural activity, that is, rebuilding „industrial cities” into „knowledge-based cities”.

2. REVIVAL OF THE CITY

City revival is the third and last element of the so called triad of urbanization. Both crisis and renewal manifest themselves in economy, culture and social life in their own different ways. According to Andrzej Majer, one can say that „revival is a metaphorical name given to the next stage and an interpretation of the process which indeed qualitatively intensifies the renewal, making the cities regain their attractiveness”¹⁰. Revival is marked by two basic tendencies: the first one is demographic restoration of the city which had been depopulated, meaning migration or return of its inhabitants. The other tendency is significant "animation" - presence of many deep positive changes in central areas of a given agglomeration¹¹.

A set of correlated city revival causes may be observed. The first group consists of economic-geographic causes, such as growth of population which has positive effect on economic aspects. Urban economy's productivity is increased as a result of local market development (stimulated by the volume and density of population)¹². The other group is made up of social-cultural causes - increasing the added value achieved by concentrating large amount of high quality human capital over a certain area. Calling upon Richard Florida's creative class conception, one should note that reviving cities are especially attractive to representatives of creative class and, consequently, creative enterprises, etc. Both groups of causes are interrelated and the instance of their parallel existence indicates that the revival period has begun.

3. THE IMPORTANCE OF CREATIVE CLASS FOR CITY DEVELOPMENT

One of the popular concepts of creative cities (and creative class) is a theory introduced by American sociologist and economist Richard Florida. This researcher received international recognition thanks to his book *The Rise of the Creative Class*¹³, and the one published in 2005 - *Cities and the Creative Class*¹⁴. Richard Florida is the co-author of one of the first American programs of academic business incubators run in Pittsburgh by the Carnegie Mellon University. The program aimed at animating students' resourcefulness, but first of all - developing cooperation between enterprises located in the city and region and the university's research centers. Although the program turned out to be a great success, Florida noticed that despite numerous tax relieves, perfect infrastructure and

⁹ Majer A. 2014. *Odrodzenie miast*. Łódź: Wydawnictwo Scholar : 57.

¹⁰ Majer A. 2014. *Odrodzenie miast*. Łódź: Wydawnictwo Scholar : 137.

¹¹ Duxbury N. 2004. *Creative Cities. Principles and Practices*. Ottawa: Canadian Policy Research Network

¹² Scott A. J. Storper M. 2003, "*Regions, Globalization, Development*", *Regional Studies* 37 (6-7) Oxford : 579-593.

¹³ Florida R. 2002. *The Rise of the Creative Class: and how it transforming work, leisure, community and everyday lifes*. Nowy Jork: Basic Book.

¹⁴ Florida R. 2005. *Cities and the Creative Class*, Nowy Jork: Routledge.

potential development in areas of education and growth provided by the university, companies still continued to move their seats (as well as production) to other regions of the country. This obviously led to the formulation of the question: why did it happen? Having explored the subject, Richard Florida came to the conclusion that high-tech companies choose location for their activities paying attention mostly to the creative potential of its inhabitants. This revolutionary observation led to the creation and development of the concept of creative cities and the creative class.

Richard Florida's theory assumes that the deciding factor about pace and direction of urban growth or regional growth is the region inhabitants' creative potential. R. Florida understands all people as creative individuals (regardless of their profession, education, etc.) but in his research he focused only on those who continue to use their creative potential (as a foundation of their job). By analyzing the structure of American economy, he estimated that one third of all employees were employed in creative sectors, including scientists, engineers, inventors, artists, designers, financiers, etc. Although creative employees constituted only a third of all employed (about 38,3 million people), they were estimated to have generated over two thirds of American GDP. Moreover, creative workers largely contributed to providing jobs for the others, as their activity stimulated production and allowed employment to be maintained in non-creative sectors. When analyzing territorial distribution of the class representatives, one can observe that they often concentrate in particular places, usually large municipal centers. Thus, geography of creativity concept was later subject to further research, resulting in following observations:

1. Creative class representatives show tendency to abandon traditional corporate environments and places inhabited by physical workers to head towards creative centers.
2. Creative centers show economic dominance over other areas thanks to high concentration of creative potential - creative individuals and high-tech companies. These centers are also leaders in population and employment growth.
3. Creative centers owe their growth dynamics to creative people who inhabit them. These people create certain atmosphere of openness and innovation, facilitating all creative activity, including artistic, cultural, innovative activity. Resources necessary for the development of traditional economy have secondary meaning.
4. Creative individual, when deciding on where to live, are mainly driven by the place's social culture. They value openness and diversity as well as tolerance. Traditional deciding factors, such as the number of jobs, recreational infrastructure or transport are far less important than when representatives of other classes make their choices.

Richard Florida simplified the creative cities theory to one rule called 3T - technology, talent, tolerance. All these elements are interrelated and the creative potential of an urban individual depends on how they are implemented in practice. Development of modern technology is one of the foundations of economic growth; R + D (Research + Development) depend on human capital quality, so places with highest values (highest concentration) develop at greatest speed. Tolerance, as an element of 3T becomes certain culture base for innovation. Centers with high tolerance values attract extraordinary individuals who escape norms and at the same time are very creative - e.g. artists. The atmosphere of

tolerance also helps information to be exchanged easier and makes contact between diverse environments easier. (e.g. between artists and high-tech industry representatives)¹⁵.

When putting his concept into practice, Richard Florida used several indexes whose application was intended to show the most creative agglomerations. These indexes include: Bohemian Index, Melting Pot Index, Culture Index, Gay Index, Talent Index, Tech-Pole Index and Coolness Index. Urban centers which scored the highest (San Francisco, Boston, Seattle, etc) also dominated as far as economy and demography were concerned. The author has formed a theses, being one of the key conclusions of his research, which said that concentration of creative class representatives in a given area attracts more creative individuals. This can lead to the conclusion that „the creative attract the creative”. Richard Florida also performs a deep analysis of creative individuals' attraction potential for territorial units of the USA (he takes into account the strenghts of the country and mechanisms making the USA slowly lose their creative advantage)¹⁶.

The term Creative City is parallel with the term Smart City, meaning intelligent city - comprised of dimensions such as economy (high productivity and market innovation and flexibility), communication and transport (fast connection network), environment (optimization of energy resources use), people (change initiators), quality of life (intelligent city guarantees high quality of life) and intelligent solutions (working out appropriate management procedures). The element which joins all abovementioned dimensions is that they are smart. N. Komninos defines this term as teritory of high capability of learning and innovating, as well as creative, having research-infrastructure institutions, university level education, digital infrastructure and communication technologies combined with high level of management effectiveness¹⁷.

4. CREATIVE INDUSTRY IN RZESZÓW'S ECONOMY

The term „creative economy” or „creative industries” relates to industry based on knowledge and intellectual property. Here, intellectual property constitutes the added values of scientific research (concerning new technologies) and cultural context of creative units which make up the human core of the industry. The remaining elements of these industries are fields showing high level of technical advancement, so called knowledge intensive industries, e.g. ICT (Information and Communication Technology), R+D (Research and Development), financial services, design, etc. According to Beata Namyślak, creative fields enjoy intensive development, contributing to economic growth in the scenario when fields based on mining and processing resources are losing ground¹⁸. The term Creative Industry is gaining popularity although it is often defined and interpreted in various ways.

All creative industries are tightly interconnected so, as a result, the "spreading effects" can be noticed on many dimensions. The best example of this phenomenon is the flow of knowledge created in one company and its absorption in another company. These effects may also concern the issues of companies' demand - it often happens if demand for one

¹⁵ Klasik A. 2009. Kreatywne miasto - kreatywna aglomeracja. Katowice: Wydawnictwo Akademii Ekonomicznej w Katowicach.

¹⁶ Florida R. 2007. The Flight of the creative class. New York: HarperCollins.

¹⁷ Komninos N. 2002. Intelligent cities:Innovation, Knowlage system and Digital Space. London: Spon Press : 1.

¹⁸ Namyślak B. 2009. Przemysły kreatywne w aglomeracji wrocławskiej. Kreatywne miasto - kreatywna aglomeracja, Katowice : 134.

company's products increases as a result from another company's development. This phenomenon may be observed when for example there is increase in demand for CDs as a result of CD industry development. Consequently, processes of "spreading" may also adopt the form of mutual inspiration of different bodies to improve their activities¹⁹.

Creative economy is becoming priority in development strategies of countries, regions and particular urban units. European Commission announced year 2009 as the European Year of Creativity and Innovation so as to encourage businessmen and public institutions to show more involvement in scientific research, introduce innovative technologies and build knowledge-based economy. Creative industry classification carries numerous methodological problems as the industry may be interpreted in different ways. The same concerns measuring its scale. What is available is indirect measurement, that is estimation of influence of creative industry on the whole economy of each country or region²⁰, or by using more complicated tools, such as European Creativity Index designed by Anton Bobric and Anton Draghic. The index is made up of human capital index, scientific talent index, technological innovation index, scientific-research index, as well as indexes measuring tolerance levels²¹.

Creative industry classification can be performed in many ways, but when studying research results British solutions are mostly taken into account. The most popular works include the classification created by English Department of Culture, Media and Sport (DCMS), defining the industry as activity based on intellectual property. The popular definition of the industry, along with a set of indexes was also provided by Richard Florida, however the practice of European research of creative industry indicates that the British solution is more often used (and, thus, offers more possibilities for comparative analysis). DCMS includes advertising, architecture, art and antique market, television, radio, computer programming, film and video markets as parts of creative industry, as well as publishing, fashion, design (graphic, industrial, multimedia), artistic activity, entertainment and computer games²².

In order to gather all creative entities active in Poland in one coherent group, one should use the PKD classification (Polish Activity Classification), that is formally accepted, hierarchical and systematic set of divisions into all kinds of social-economic activity realized by business entities. Despite numerous technical issues caused by artificial borders marking particular types of activity according to PKD, Beata Namyślak managed to translate DCMS instructions into positions manifested in Polish PKD: publishing activity contained in DE.22, programming activity in section K.72.2, data processing in section K.72.3, activity related with databases in section K.72.4, architecture and engineering in section K.74.2, advertising in section K.74.4, film and video industry in section O.92.1, radio and television in section O.92.2, artistic and entertainment activity in section O.92.3, informational agencies activity in section O.92.4, as well as activity of libraries, archives

¹⁹ Szultka S. 2012. *Klastry w sektorach kreatywnych – motory rozwoju miast i regionów*. Warsaw: Polska Agencja Rozwoju Przedsiębiorczości : 129.

²⁰ Celmer A. 2012. *Miary kreatywności na bazie wybranych modeli i teorii przemysłów kreatywnych*. W: *Kreatywna gospodarka w mieście i aglomeracji*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego.

²¹ Bobirca A., Draghici A. 2011. "Creativity and Economic Development". *World Academy of Science. Engineering and Technology*, nr 59.

²² Oakley K. 2004. "Not So Cool Britannia: The Role of the Creative Industries In Economic Development". *International Journal of Cultural Studies*, nr 7 (1).

and museums in section O.92.5. Translating DCMS instructions into PKD codes poses one more technical challenge: PKD classification is changing, so that: initially, KGN classification was used, and then it was replaced by EKD, further replaced by PKD classification in 1997. It was later amended in 2004 and again in 2007 (currently binding). The translation of activities as described above concerned the classification of 2004, so an update was necessary to match it with the 2007 amendment. Table 1 gives creative fields according to DCMS as translated into KGN, EKD, PKD 1997, PKD 2004, PKD 2007.

Table 1. Creative industry according to DCMS as translated into business activity classifications used in Poland.

PKD 2004	PKD 2007	PKD 1997	EKD	KGN
DE.22 - publishing	18 58	22	22	661
K. 72.2 - programming	62.01.Z 62.02.Z 62.09.Z	72.20.Z	72.20	671
K.72.3 - data processing	62.03.Z 63.11.Z	72.30.Z	72.30	671
K. 72.4 - activity related to databases	62.01.Z 63.11.Z 63.12.Z	72.40.Z	72.40	671
K. 74.2 - architecture, engineering	71 74.90.Z	74.20.A 74.20.B 74.20.C	74.20	37
K. 74.4 - advertising	73	74.40.Z	74.40	893
O.92.1 - film and video industry	59.11.Z 59.12.Z 59.13.Z 59.14.Z 59.20.Z	92.11.Z 92.12.Z 92.13.Z	92.11 92.12 92.13	662
O.92.2 - radio and television	59.11.Z 59.20.Z 60.10.Z 60.20.Z	92.20.Z	92.20	846
O.92.3 - artistic activity and entertainment	79.90.C 85.52.Z 90.01 90.02 90.03 90.04 93.21.Z 93.28.Z	92.31.A 92.31.B 92.31.C 92.31.D 92.31.E 92.32.Z 92.33.Z 92.34.Z	92.31.10 92.31.15 92.31.20 92.31.25 92.31.30 92.31.35 92.31.50 92.32 92.33 92.34.10 92.34.20	84

			92.34.30	
O.92.4 - informational agencies	63.91.Z 74.20.Z 90.03.Z	92.40.Z	92.40	-
O.92.5 - libraries, archives, museums				
libraries	libraries	libraries	libraries	libraries
92.51.A	91.01.A	92.51.A	92.51.10	832
92.51.B		92.51.B	92.52.20	
archives	archives	archives	archives	archives
92.51.C	91.01.B	92.51.C	92.51.50	893
				783
Museums	Museums	Museums	Museums	Mu-
92.52.A	91.02.Z	92.52.A	92.52.10	seums
				831

Source: own work based on data from Statistical Office in Rzeszów.

5. CREATIVE INDUSTRY ENTITIES IN RZESZÓW

Rzeszów is the capital of Podkarpackie Voivodship and the largest city in the area. According to official data as of the end of 2013 the city takes up 116,32 km² and is inhabited by about 184.000 people. The city is located at the crossing of important communication routes - road E-40 Dresden-Kiev, and national roads 9 and 19. The city functions as regional culture and education center: it offers 23 libraries, 7 museums, 4 cinemas: there is an international airport in direct vicinity of the agglomeration, as well as Podkarpacki Park Naukowo-Technologiczny (Scientific-Technological Park). The city also possesses moderately developed educational facilities, including the University of Rzeszów, Politechnic of Rzeszów and non-state schools - School of Law and Administration, School of Information Technologies as well as School of Business²³. As a regional scientific-cultural center, Rzeszów aspires to be deemed a creative city which is evidenced by numerous documents, including the Podkarpackie Voivodship's Development Strategy.

According to the REGON database as of December 2013, 23703 business entities are registered in Rzeszów, 3771 out of which belongs to creative industry. The exact number of creative industry entities registered in Rzeszów between 2009 and 2013 (when the newest PKD classification of 2007 was binding) has been presented in table 2. The table shows the number of entities from particular creative industries after the application of DCMS system.

²³ Tuziak A. 2013. *Innowacyjność w endogenicznym rozwoju regionu peryferyjnego*. Warsaw: Scholar : 10-26.

Table 2. Business entities belonging to particular fields of creative industry according to DCMS in Rzeszów in 2009-2013.

	2009	2010	2011	2012	2013
publishing	229	254	255	249	241
programming	385	449	490	553	609
Data processing	61	79	84	90	106
Activity related with databases	396	480	525	588	635
Architecture, engineering	1065	760	1107	1185	1235
advertising	400	406	414	437	458
Film and video industry	39	46	50	47	48
Radio and television	40	47	51	45	42
Artistic activity and entertainment	207	217	202	219	232
Informational agencies	116	120	115	133	156
Libraries, archives, museums	10	10	9	9	9
Creative industry (together)	2948	2868	3302	3555	3771
overall Rzeszów (entities of all industries)	19775	21177	21543	22406	23703

Source: own work based on data from Statistical Office in Rzeszów.

Looking at the above grouping, one can easily notice the positive trend - the increasing number of business entities which happened within the 2009-2013 period. The number of business entities increased then by 3928 units, meaning increase amounting to 19,8 %, and the creative industry increased by 823 entities, that is 27,91% improvement.

6. BUSINESS ENTITIES OF RZESZÓW BASED ON THE NUMBER OF EMPLOYED

Based on data of REGON, entities have been categorized according to the number of employed workers (persons employed in the entities understood as belonging to creative industry). Table 3 presents the structure of employment in creative industry in Rzeszów in 2009-2013.

Table 3. Employment in creative industry in Rzeszów in 2009-2013.

	2009	2010	2011	2012	2013
publishing	686	731	739	975	958
programming	2136	4244	4132	4078	4058
Data processing	217	239	242	233	239
Activity related with databases	2191	4311	4203	4178	4176
Architecture, engineering	2175	1904	2230	2158	2202
advertising	603	603	624	870	925
Film and video industry	66	76	81	69	67
Radio and television	199	209	204	192	187
Artistic activity and entertainment	657	641	608	658	674
Informational agencies	144	144	132	108	131
Libraries, archives, museums	280	280	284	284	284
Creative industry (together)	9354	13382	13533	13803	13901
Overall Rzeszów (employment in all industries)	110450	115230	113857	110006	108800

Source: own work based on data from Statistical Office in Rzeszów.

The above grouping helps one see easily that the level of employment in the creative industry accounts for a small percentage (12,7% in 2013) of all employed in Rzeszów. The increase in jobs in creative industry between 2009 and 2013 was as large as by 4547 persons, which is 48,6 %, but it was mainly due to significant increase in employment in IT sector between 2009 and 2010.

SUMMARY

The creative industry constitutes a foundation of knowledge-based economy. Bearing in mind the conclusions arising from Richard Florida's research, it can be stated that the creative potential of territorial units, reflects their competitiveness. The creative industry has been defined based on DCIM instructions and translated into the currently binding Polish PKD system. Rzeszów has been described based on the number of workers employed by creative business entities (as well as their relation to all entities registered in the city). It can be noticed that employment in creative business entities, as well as the number of such entities has been constantly increasing. It is quite difficult to clearly state actual number and potential of the creative industry of Rzeszów based on PKD classification as it involves numerous ambiguities. It should be remembered that many registered business entities (possessing proper PKD codes) do not really run creative activities and, the

other way around, certain entities without particular PKD codes - do. In the case of many creative fields (e.g. video production) people dealing with such activity do not register their companies and, consequently, do not exist in official data of Statistical Office.

Another problematic issue is the fact that when determining the number of persons employed in the creative industry, one can only view overall data (that is the sum of employees of a given business entity which is classified as creative.) One cannot establish how many people in the company are actually creative workers (and how many work as drivers, receptionists, etc.)

It is a very difficult challenge to estimate to what extent the actions taken up by City Council have contributed to the increase in creative industry. Another issue requiring thorough research is also the pace of growth of the industry. One should address this question: how to make it increase? Bearing in mind Rzeszów's geographic location and lack of other powerful centers in the vicinity, the city stands in front of a real chance to become the dominating agglomeration in the region.

REFERENCES

- [1] Beauregard R. 1993. *Voices of Decline: The Postwar Fate of U.S. Cities*. Oxford: Basil Blackwell.
- [2] Bobirca A., Draghici A. 2011. *Creativity and Economic Development*, World Academy of Science. Engineering and Technology, nr 59.
- [3] Celmer A., 2012, *Miary kreatywności na bazie wybranych modeli i teorii przemysłów kreatywnych*. W: *Kreatywna gospodarka w mieście i aglomeracji*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego.
- [4] Duxbury N. 2004. *Creative Cities. Principles and Practices*. Ottawa: Canadian Policy Research Network.
- [5] Florida R. 2007. *The Flight of the creative class*. New York: HarperCollins.
- [6] Florida R. 2002. *The Rise of the Creative Class: and how it transforming work, leisure, community and everyday lifes*. Nowy Jork: Basic Book
- [7] Florida R. 2005. *Cities and the Creative Class*. Nowy Jork: Routledge.
- [8] Holcomb H.B. Beauregard R.A. 1981, *Revitalizing Cities*. Washington: Association of American Geographers.
- [9] Komninos N. 2002. *Intelligent cities: Innovation, Knowledge system and Digital Space*. Londyn: Spon Press.
- [10] Klasik A. 2009. *Kreatywne miasto - kreatywna aglomeracja*. Katowice: Wydawnictwo Akademii Ekonomicznej w Katowicach.
- [11] Majer A. 2014. *Odrodzenie miast*. Łódź: Wydawnictwo Scholar.
- [12] Namyślak B. 2009. *Przemysły kreatywne w aglomeracji wrocławskiej*. W: *Kreatywne miasto - kreatywna aglomeracja*. Katowice.
- [13] Oakley K. 2004. *"Not So Cool Britannia: The Role of the Creative Industries In Economic Development"*, *International Journal of Cultural Studies*, nr 7 (1).
- [14] Tuziak A. 2013. *Innowacyjność w endogenicznym rozwoju regionu peryferyjnego*, Warsaw: Wydawnictwo Scholar.
- [15] Savage M., Warde A. 1993. *Urban Sociology, Capitalism and Modernity*. New York: Continuum.
- [16] Scott A. J., Storper M. 2003. *"Regions, Globalization, Development"*, *Regional Studies*, 37 (6-7) Oxford.
- [17] Szultka S. 2012. *Klasy w sektorach kreatywnych – motory rozwoju miast i regionów*. Warsaw: Polska Agencja Rozwoju Przedsiębiorczości.
- [18] Załocki G. 2012. *Rozwój zrównoważony: idee, efekty, kontrowersje*. Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika.

- [19] Zielenbach S. 2000. *The Art of Revitalization. Improving Conditions of Distressed Inner-city Neighbourhoods*. New York-London: Taylor and Francis.

KLASA KREATYWNA I PRZEMYSŁ KREATYWNY JAKO ŹRÓDŁA ODNOWY MIASTA (PRZYPADEK RZESZOWA)

Kryzys jest zjawiskiem powszechnym, objawiającym się w różnych stadiach rozwoju podmiotów i struktur społecznych. O kryzysie w procesie rozwoju jednostek miejskich możemy mówić w sytuacji kiedy wyczerpaniu ulegają dotychczasowe źródła wzrostu, a jego kierunki zostają zachwiane. Miasta Zachodu cierpiące w II poł. XX wieku z powodu deindustrializacji próbowano rewitalizować poprzez wdrażanie wielkich projektów przebudowy lub programów społecznych skierowane do ich mieszkańców. Najbardziej efektywne z perspektywy czasu okazały się inwestycje w kulturę, czy wzmocnienie roli miasta jako ośrodka kultury wyższej. Współgra to z koncepcją Richarda Floridy, który spopularyzował koncepcję klasy kreatywnej, kreatywnych i miast i powiązanych z nimi ściśle branż kreatywnych. Według Floridy nowy modus kapitalizmu krajów wysokorozwiniętych opierać się będzie przede wszystkim o wartość intelektualną wytwarzaną przez branżę kreatywną. Wartość ta przyjmująca postać innowacji, nowych technologii, designu lub dóbr kultury jest motorem dla całej gospodarki i generuje miejsca pracy w sektorach nie-kreatywnych. Kluczową kwestią dla stworzenia kreatywnego centrum miejskiego jest jego umiejętność do przyciągnięcia przedstawicieli klasy kreatywnej - wysoko wyspecjalizowanych pracowników, naukowców, designerów i artystów. Branże kreatywne zostały wyłonione na podstawie przełożenia brytyjskiej kwalifikacji DCIM na polskie kody działalności gospodarczej (PKD). Rzeszów został scharakteryzowany pod kątem liczby podmiotów gospodarczych, zaliczanych do branż kreatywnych oraz pod kątem liczby pracowników zatrudnionych w tych podmiotach. Można zauważyć, że zarówno liczba kreatywnych przedsiębiorstw, jak i ich pracowników systematycznie zwiększa się, stanowiąc coraz większy odsetek ogółu miejsc pracy w mieście. Miasto kreatywne jest jednym z alternatywnych kierunków rozwoju Rzeszowa, co jednak nie wyraża się w oficjalnych planach i strategiach jego wzrostu.

Słowa kluczowe: klasa kreatywna, przemysł kreatywny, kryzys miasta, odnowa miasta.

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REFLECTION OF PROMOTIONAL STRATEGY IN THE DIVERSITY OF NATIONAL PAVILIONS DURING EXPO 2015

This paper aims to classify pavilions prepared for universal expositions. For the purpose of the classification, cohesion between displays and assumptions of national branding, as well as the central idea of Expo was taken into consideration. The first part of the article presents the key areas and determinants of managing a performance project during a world exposition. The second part of the publication contains an assessment and classification of national pavilions, which were based on the observation conducted by the author during Expo 2015. In the context of nation branding indicated: pavilions which fit squarely into a current promotional strategy; pavilions which are not connected with a current concept of promotion, however, which consider existing social, economic or political factors; pavilions which are not in line with a long-term concept of country promotion and do not take into account present social, economic or political factors. Moreover, taking into consideration the level of adjustment of particular countries' performances to a theme of Expo, pavilions were be categorised as: pavilions which correspond closely with the exhibition theme; pavilions which correspond loosely with the exhibition theme; pavilions which do not correspond at all with the exhibition theme. The exposures of Ethiopia, France, Germany, Slovakia, Slovenia and Turkmenistan are given as examples. Special attention was given to the Polish pavilion. Finally, the author focused on whether participation in world exhibitions in the 21st century is legitimate – taking into account the context of costs related to the preparation of pavilions and universal access to the Internet.

Keywords: Expo exhibitions, trade fair performance management, exhibition architecture, country image.

1. INTRODUCTION

Great universal expositions, whose aim is to promote achievements of the whole civilisation and inform about successes of individual countries, have been held for more than one and a half century. Nowadays, almost 200 exhibitors every five years strive to display their offers in an appealing manner and thus attract the attention of tourists, investors and media representatives. Preparing and staging a six-month long display requires the effort of many people who have to get involved in such an undertaking for at least one year, and moreover, necessitates huge financial outlays. Therefore, a proper approach to exhibition project management is of crucial importance.

This article aims to put forward a classification of pavilions erected for Expo events, considering whether they conform to the assumptions of national branding and adhere to the central concept of an exhibition. Performances given by individual countries were

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assessed based on the two-day long observation conducted during the world exposition which was held in Milan in 2015.

2. PROCESS OF PREPARING NATIONAL PAVILION – MANAGERIAL APPROACH

Currently, the largest exhibition events – Expos – are referred to as world (universal) expositions. Apart from them, also International (specialised) Expositions with narrower themes, which are smaller in scale, are organised. Rights to host both the types of exhibitions are granted to selected cities by BIE – *Bureau International des Expositions* (The International Exhibitions Bureau), which is an association of 168 countries.

It is believed that the event which started the history of world expositions was the Great Exhibition of the Works of Industry of All Nations. The exhibition was held at London's Hyde Park in 1851. After that event, different countries hosted exhibitions devoted to the review of worldwide achievements – in the dimension of both the whole civilisation and individual states, and those exhibitions were staged every couple of years, at irregular intervals. Since 2000, the expositions have been taking place every five years. The last edition was organised in 2015 in Milan, and the next Expo opens in 2020 in Dubai. In the period of more than one and a half century, nearly 70 exhibitions, different from each other both in terms of their importance and nature, have been staged, including 34 events that enjoyed the status of universal expositions.

Contemporary world expositions are attended by approx. 200 exhibitors (countries, international organisations and so-called Expo partners). Therefore, there is strong competition for visitors' attention. An average person who arrives to see a fair, even when staying for the whole week on the premises of the exposition, is not able to visit all the displays. That is why most exhibitors compete with each other using their own pavilions, which are usually original structures, as well as stage their performances following action-packed programmes comprising multiple interesting events.

It should be stated, based on a review of books and articles, that scientific literature comprises very few publications on world expositions. Authors of the works published thus far sometimes focused on marketing aspects of Expo events. Only few articles analysed the dimensionality of the image of the very events², their impact on the image of a host city³ and a host country⁴. In the context of marketing, some authors turned their attention to the motives for participating in exhibitions⁵, as well as to experiences that visitors

² C.Q. Deng, M. Li, H. Shen, *Developing a measurement scale for event image*, "Journal of Hospitality & Tourism Research", 2015/39(2), pp. 245-270.

³ M. De Carlo, S. Canali, A. Pritchard, N. Morgan, *Moving Milan towards Expo 2015: designing culture into a city brand*, "Journal of Place Management and Development", 2009/2(1), pp. 8-22; L. Yu, Ch. Wang, J. Seo, *Mega event and destination brand: 2010 Shanghai Expo*, "International Journal of Event and Festival Management", 2012/3(1), pp. 46-65; K. Xue, X. Chen, M. Yu, *Can the World Expo change a city's image through foreign media reports?*, "Public Relations Review", 2012/38(5), pp. 746-754; C.Q. Deng, M. Li, *A model of event-destination image transfer*, "Journal of Travel Research", 2014/53(1), pp. 69-82.

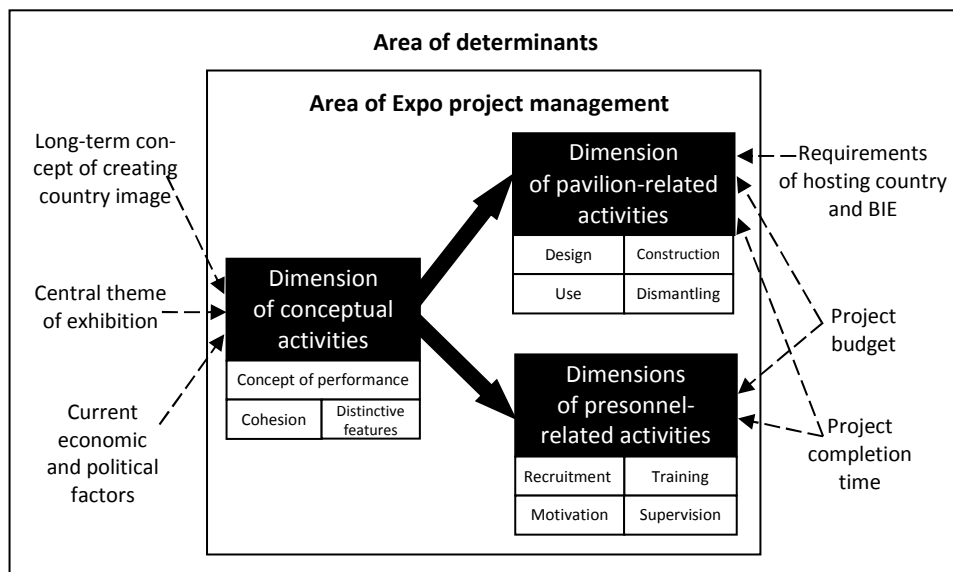
⁴ N. Chen, *Branding national images: The 2008 Beijing Summer Olympics, 2010 Shanghai World Expo, and 2010 Guangzhou Asian Games*, "Public Relations Review", 2012/38(5), pp. 731-745.

⁵ Ch.-K. Lee, S.K. Kang, Y.-K. Lee, *Segmentation of Mega Event Motivation: The Case of Expo 2010 Shanghai China*, "Asia Pacific Journal of Tourism Research", 2013/18(6), pp. 637-660.

have⁶. However, there is a lack of publications addressing a management aspect of the preparation of national performances at Expos.

Preparing a display which will attract a big audience requires proper exhibition project management. Such management entails taking decisions on many planes (Fig. 1). The first decision-related area is represented by a strategic (conceptual) plane and involves mainly developing a concept of a performance. Such a concept should correspond well with the central theme of Expo, as well as allow for creating a unique pavilion and taking actions aimed at making a specific country's display distinguishable from those made by other countries. Furthermore, the performance concept should be cohesive with other marketing activities performed as a part of the philosophy developed to create an image of a specific country. Both what the pavilion looks like and what is happening during the performance should result from a national branding strategy, strengthening thus a concept of country positioning that is being implemented consistently. Conceptual activities are influenced also by current political (especially in states with the totalitarian system) and economic factors (e.g. willingness to support the export of resources or particular products, promotion of tourists destinations, encouraging investors to spend money on new projects).

Fig. 1. Managing project of preparing and staging performance during Expo event – planes and determinants



Source: own elaboration.

Considering the dimension of pavilion-related activities, one has to refer to a process comprised of multiple actions, which – in a general sense – can be perceived as the following stages: selecting a project (which is frequently chosen as a result of a contest procedure), erecting the pavilion on Expo premises, using the building during the exhibition, dismantling. Each of the four stages involves management through taking operational

⁶ E. Björner, P.O. Berg, *Strategic creation of experiences at Shanghai World Expo: a practice of communication*, "International Journal of Event and Festival Management", 2012/3(1), pp. 30-45.

decisions. Designing a pavilion requires developing a concept of the shape of the building (including its facade), as well as planning individual areas thereof: the entrance zone, the exhibition part, corridors, personnel and utility facilities. When building the pavilion, it is also relevant to carry out numerous actions, including particularly obtaining necessary permits and arranging for a team of construction workers. At this stage, proper logistics is of crucial importance to ensure that material required to construct the pavilion and showpieces is delivered in time. Using the building during the exposition entails mainly repairing possible defects and performing marketing activities inside the building according to a country promotion concept, developed before the event. Except for very few cases, all national pavilions are of a temporary nature and must be dismantled after the exposition finishes. The stage during which the pavilion is being dismantled also requires proper organisation of works and decision-making (e.g. it must be decided what to do with the showpieces exhibited at the Expo).

The very last dimension of taking decisions, also those of an operational nature, involves managing pavilion personnel. In that respect, the following must be highlighted: a recruitment process to select people having appropriate qualities and skills (e.g. who speak the language of a hosting country), training (including, among other things, familiarising staff members with goals of a national performance and informing them about the necessity to perform cohesive promotional actions), motivation and control, constant supervision.

The areas of pavilion and personnel management are determined mainly by a budget available for a performance. It is the amount of financial resources, which has a powerful impact on the way a building presenting a national display looks like, what its size is and what it is equipped with. The budget influences also the number of staff members, as well as diversity of marketing activities. The amount of time that is left before the exhibition opening constitutes also a key determinant. It might be impossible to construct a pavilion containing a complex display and prepare numerous accompanying events – e.g. concerts, economic missions within several months. As a rule, it can be assumed that the time needed to complete a national pavilion does not exceed one year (generally, this is the period of time during which an organiser makes an area available for construction), although in many cases, the completion time is limited to several months or even a couple of weeks⁷. Recruitment and training of personnel should be also planned in advance and requires time. The process of designing, constructing, using and dismantling a pavilion depends also on BIE requirements and legal regulations applicable in a hosting country (e.g. construction law in force).

3. REVIEW OF PAVILIONS IN THE CONTEXT OF IMPLEMENTING NATIONAL BRANDING ASSUMPTIONS

A pavilion used at a world exposition serves a role of a showpiece, as its appearance decides how many visitors will enter the building. Forming its external shape, arranging the area and setting up a display system, selecting a construction type, materials and colours, deciding what type of lighting and loud speaker system should be used, creating a proper atmosphere – these are instruments employed to present the fundamental message

⁷ M. Kysiak, *Architektura pawilonów wystawowych*, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1998, p. 33.

of the national display. The manner how solutions to those problems are found demonstrates the level of intellectual potential and technological capacity of a country which an exhibitor comes from⁸. Throughout the decades, conveying information through the form of pavilions has changed from “record-breaking” engineering achievements to architectural and designer hybrids, supported by state-of-the-art technology. At present, symbolism of exhibition structures is clearer and closer to popular stereotypes or icons with a global range⁹.

Based on the observation of performances given by participants of Expo 2015, it is possible to put forward a classification of national pavilions, which includes a long-term concept (strategy) of country promotion. In that respect, the following three groups can be distinguished:

- pavilions which fit squarely into a current promotional strategy of a country (complying with the assumptions of national branding);
- pavilions which are not connected with a current concept of country promotion, however, which consider existing social, economic or political factors;
- pavilions which are not in line with a long-term concept of country promotion and do not take into account present social, economic or political factors.

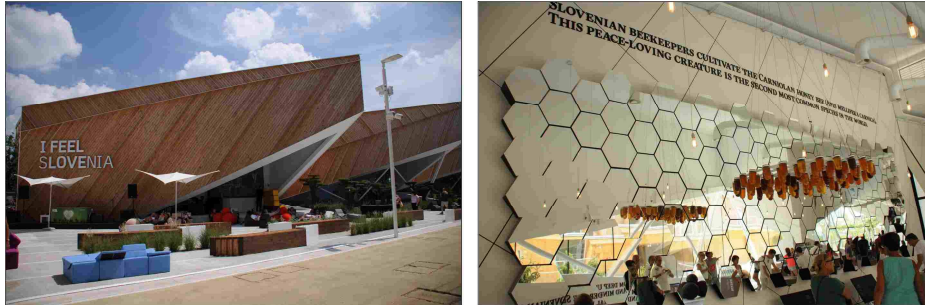
An example of a pavilion shown at Expo 2015 which was cohesive with a present concept of creating a national brand was the building used by Slovenia to exhibit its offer (Fig. 2). The pavilion was comprised of five pyramids set on a geometrically diverse surface built from the natural materials (wood and glass). Since 2007, Slovenia has been using the concept of marketing activities named as “I FEEL SLOVENIA”, which aims to distinguish the country clearly from other countries. Visual cohesion and consistency in performing promotional activities are supported by the guidelines included in “The brand of Slovenia. Brand book” (this document contains fundamental assumptions of corporate identity)¹⁰. Referring, through exhibition activity, to the concept of promoting the country image was not only limited to placing the central message of the brand on the facade of the Slovenian pavilion, but entailed also using advertising elements (brochures, leaflets, stickers, gadgets), which were prepared in line with the guidelines set out in the “Brand book”.

⁸ Ibidem, p. 125.

⁹ W. Świątek, *Trzy polskie pawilony na wystawy światowe Expo*, „Czasopismo Techniczne. Mechanika” 2012/26, p. 334.

¹⁰ „The brand of Slovenia. Brand book” is available on the website: http://www.ukom.gov.si/fileadmin/ukom.gov.si/pageuploads/dokumenti/arhiv_projektov/IFS/Slovenias_Brand_brand_book.PDF.PDF (access on: 17.09.2015).

Fig. 2. The Slovenian pavilion (own).



Source: own pictures.

An example of a display, in which greater attention was given to political and economic factors, rather than to the central theme of the Expo, was the pavilion set up by Turkmenistan (Fig. 3) When entering the building, people could see a picture of the Turkmen president, and further, most elements of the display were devoted to rich deposits of natural gas and crude oil. A characteristic feature of the display was glamour and a combination of tradition (folk ornaments, rugs typical of Turkmen yurts) and modernity (a large display in a form of a LED bowl hanging from the ceiling). The roof garden on top of the building presented yurts, traditional carpets and a green area with a café¹¹. The whole display was prepared under the slogan “Water is life”, even though there were very few references to water inside of the pavilion.

Fig. 3. The Turkmen pavilion



Source: own pictures.

The goal of pavilions classified under the last group, i.e. structures which are not connected with a concept of country promotion and do not take into account current social, economic or political factors, is only to make their presence felt during Expos. Most frequently, such pavilions are buildings with appearance devoid of uniqueness, which form an element of a larger exhibition (complex) group. During Expo 2015, displays staged by some of the exhibitors were located in an isolated area, within a group of identical buildings. So-called “clusters” were created, in which countries were grouped under the following themes: “Rice”, “Cocoa and chocolate”, “Coffee”, “Fruits and legumes”, “Spices”,

¹¹ *Expo Milano 2015. Short guide*, Mondadori Electa, 24 Ore Cultura, Milan 2015, p. 30.

“Cereals and tubers“, “Bio-Mediterraneum“, „Islands, sea and food“, “Arid zones”. For example, the “Coffee” cluster comprised countries from different continents: Burundi, El Salvador, Ethiopia, Dominican Republic, Guatemala, Kenya, Rwanda, Uganda, Yemen, Timor-Lest (Fig. 4).

Fig. 4. Pavilions of the “Coffee Cluster”



Source: own pictures.

It is worth noting that among the countries exhibiting themselves in the clusters, there were very few cases which – although the external appearance of their buildings was not remarkable – were able to prepare interesting displays inside the pavilions, appealing to visitors and corresponding with the motto of the world exposition. One of such examples included the display staged by Ethiopia (Fig. 5). Apart from presenting a process of gathering and brewing coffee (combined with tasting), a wide range of plants grown in this country was exhibited. The performance was held under the slogan: “Ethiopia: the Root of Coffee and Much More”.

Fig. 5. The Ethiopian pavilion



Source: own pictures.

Among the cluster-arranged exhibitors, there were mainly poorer countries, which could not allocate large sums of money to the participation in the Expo. Limited budgets were the reason why they could not erect pavilions based on their own unique designs.

4. REVIEW OF PAVILIONS IN THE CONTEXT OF REFERRING TO THE CENTRAL EXPO THEME

It is a common occurrence that there is a main idea lying behind every universal exposition, which is reflected in the central theme. The previous three Expo events were as-

signed the following slogans: “Nature’s Wisdom” (Aichi 2005), “Better City - Better Life” (Shanghai 2010), “Feeding the Planet, Energy for Life” (Milan 2015).

Taking into consideration the level of adjustment of particular countries’ performances to a central theme of an exhibition, national pavilions can be categorised as:

- the pavilions which correspond closely with the central exhibition theme;
- the pavilions which correspond loosely with the central exhibition theme;
- the pavilions which do not correspond at all with the central exhibition theme.

An example of the building whose interior, as well as events held therein followed strictly the theme of the exposition, was the German pavilion presented in 2015 – with the title “Fields of Ideas” and the motto “Be(e) Active” (Fig. 6). In this case, the main emphasis was laid on the food of the future. Visitors could see the displays in two ways: by strolling across the freely accessible landscape level, where they were welcomed by the 16 German federal states with their stands, or by visiting the indoor exhibition, here they could find their way from the source of food to food production and right up to consumption in the city¹². Those who entered the pavilion could interact with displays to access further multimedia information. The climax of the display was the “Be(e)active” digital show, which combined live music with active participation of an audience.

Fig. 6. The German pavilion



Source: own pictures.

Another pavilion which strongly referred to the Expo theme was the French display, whose message was: “Different Ways of Producing and Providing Food” (Fig. 7). People entering the building had to go through a kind of a labyrinth – the large garden, where plants grown in different parts of the country were presented. The pavilion had a huge cave-like structure and it was made entirely of French wood. The high vaulted roof area mixed typical French products, kitchen utensils, wood and vegetation, with video monitors showing suggestions for “producing more and better”¹³.

¹² *Feeding the Planet, Energy for Life. Expo Milano 2015. Official Catalogue*, Mondadori Electa, 24 Ore Cultura, Milan 2015, p. 95.

¹³ *Unmissable: Pavilion attractions*, <http://www.expo2015.org/en/unmissable--pavilion-attractions>, (access on: 21.09.2015).

Fig. 7. The French pavilion



Source: own pictures.

Apart from the pavilions set up by Germany and France, there were also other pavilions that adhered to the theme: “Feeding the Planet, Energy for Life”, and these were buildings exhibited by: Argentina, Azerbaijan, Iran, Russia, Spain.

Most of the exhibiting countries prepared performances that reflected the dominant dimension of the exposition, yet only to a moderate extent. The above-mentioned Slovenian pavilion, presented in 2015, exemplified the moderate compliance with the central Expo theme. The following motto was demonstrated during the Slovenia’s performance: “I Feel SLOVEnia. Green. Active. Healthy”. The exhibitor was present in Milano with five main themes: saltpans, bees, thermal and mineral waters, hiking and cycling, and the measurement of black carbon particles¹⁴.

Yet another example of referring to the central theme of the exhibition in a moderate manner was the pavilion demonstrated by Slovakia (Fig. 8) The display covered six thematic issues: traditions, nutrition, innovations, experiences, culture and sport. The whole was referred to as: “The World in Your Pocket”. Slovakia was shown as “a place for recharging”. There was the relaxation area outside the building – consisting of a cube of wooden slats with a waterfall that drove a watermill system – which contained a series of beanbag chairs where smartphones and tablets could be recharged¹⁵. Inside the pavilion, apart from the demonstration zone, a restaurant was located, where dishes typical of Slovak cuisine were served.

Under the last group of displays, i.e. the ones which did not refer anyhow to the central theme of the exhibition, one has to classify mainly the pavilions of poorest countries. Most frequently, those countries did not have independent pavilions and exhibited themselves in cluster-like arrangements. Their displays were formed predominantly by simple showpieces connected with tourism, and visitors were served by personnel consisting of few people (one or two members). Such an observation was exemplified by the pavilions used by the countries like: Afghanistan, Algeria, Cameroon, Congo, Gambia, Sierra Leone, Uganda, Zimbabwe. Sometimes, a food zone was used as the main part of the display, where visitors could taste regional dishes and drinks, which was the case, for example with Cuba and Bangladesh.

¹⁴ *Feeding the Planet, Energy for Life. Expo Milano 2015. Official Catalogue*, Mondadori Electa, 24 Ore Cultura, Milan 2015, p. 152.

¹⁵ *Unmissable: Pavilion attractions*, <http://www.expo2015.org/en/unmissable--pavilion-attractions> (access on: 21.09.2015).

Fig. 8. The Slovak pavilion



Source: own pictures.

The last group covers also displays which were more similar to gift stalls, rather than to exhibition pavilions. The main part of such displays included handicrafts (e.g. jewellery, sculptures, paintings), clothes (regional costumes, headgear) and foodstuffs (like honey, spices) characteristic of a specific country and offered for sale to people who appeared at the Expo. The pavilions where Laos, Yemen, Sudan, India (Basmati Pavilion) held their exhibitions, could be good examples of the above observation.

In addition, it must be mentioned that Expo 2015 comprised not only buildings with national displays, but also several pavilions used by: international organisations (e.g. the European Union), non-profit organisations (such as Save the Children International), corporations (e.g. New Holland Agriculture). Moreover, the exhibition included thematic areas devoted to important matters – e.g. the Pavilion Zero, where a relation between the Earth and food and nature was demonstrated.

5. POLISH PAVILION DURING EXPO 2015

The Polish pavilion, covering the area of 2,369 sq. m., was the fourth largest pavilion out of all the countries participating in Expo 2015 (Fig. 9). Visitors could begin sightseeing on the first floor where they had to walk through a “magic garden”, covered with plants growing on Polish meadows and in orchards, including apple trees. There was no roof above the garden, and its walls were covered with mirrors, which created an illusion of vast space. From the garden, visitors entered the inside of the pavilion. The demonstration zone consisted of a place where showpieces were shown and films were played, both of which exhibited Polish landscapes, state-of-the-art agriculture and rapid economic growth of Poland. Further, there were a section devoted to the country’s regions and a place intended for special events, where piano concerts of Frédéric Chopin’s music were performed. The pavilion featured a shop (where visitors could buy traditional products – among other things, jam, honey, alcohol) and a restaurant (serving dishes characteristic of Polish cuisine – such as *żurek* (a sour soup), *pierogi* (dumplings), *placki ziemniaczane* (potato pancakes).

Fig. 9. The Polish pavilion



Source: own pictures.

The dominant motif used in the Polish pavilion was a wooden apple box, used in shipment as packaging for those fruits. The facade of the building was constructed in such a way that it resembled hundreds of wooden boxes piled one on another. Furthermore, the whole pavilion, because it was in a form of a cube, when seen from a certain distance could be perceived as a large-scale box. Additionally, the motif of apple boxes was utilised at the stalls set up in front of the pavilion, where Polish foodstuffs and beer were sold. The name of the country placed on the facade of the building was preceded by a “#” sign, which was supposed to trigger an association with an apple box. There was also an open space where seats for visitors were located under umbrellas illustrating growing apple trees, and those who decided to have a rest in that area were given the opportunity to taste apple juice. People entering the display area were welcomed by a display board showing a picture of an orchard and a slogan: “The Wonderland of Apple”.

The main motif of the pavilion centred thus around agriculture, and in particular, around the production of apples. Such a profile of the display should be correlated with the embargo imposed by Russia on Polish foodstuffs, which was symbolised by apples in the years 2014-2015. Therefore, the Polish display took into consideration current economic and political factors. Moreover, due to the fact that great emphasis was laid on the agricultural and food industry, the display reflected, to a considerable extent, a part of the theme of Expo 2015 (“Feeding the Planet”).

The Polish display was an example of a pavilion not directly connected with a long-term country promotion concept, as it was based on new symbolism – that had not been

seen in any promotional activities before. The motif of apple boxes was prepared only for the purpose of the exhibition activity in Milan.

6. CONCLUSIONS

Based on the visits made to the national pavilions exhibited at Expo 2015, a classification of national displays has been put forward. This has demonstrated that performances can be perceived in respect of different dimensions which allow for grouping them under various categories, considering the cohesion between displays and assumptions of a country promotion concept, as well as with regard to the aspect of adhering to a central theme of an exhibition. Pictures of selected pavilions have been shown together with descriptions to exemplify the above. Each category can be illustrated by further examples, however, owing to the word limit of this paper, it is not possible to discuss more displays. Taking into account the effectiveness of pursuing marketing goals, it is the most desirable when an exhibition project is managed in such a way that a specific country can be displayed attractively (focusing, among other things, on its natural values, scientific and cultural achievements, economic accomplishments), complying with a concept of national branding and adhering to a central theme of an exposition.

While walking around the grounds of Expo 2015, absence of many countries could be noticed. Not only those less affluent, but also rich ones – such as: Australia, Canada, Denmark, Finland, Norway, Sweden. The reason given for the absence was high participation costs. It is noteworthy that some of these countries exhibited themselves on a grand scale five years ago during Expo in Shanghai. For instance, in 2010, the Danish pavilion generated intense media interest, as the original statue of the Little Mermaid was transported from Copenhagen and put inside the exhibition building. A distinctive feature of the Swedish pavilion, on the other hand, was an environment-friendly structure (it was built of energy-efficient steel that made it possible to use the heat of the Sun to warm up the inside of the building). And as for the Australia's display at the Shanghai exhibition, the country erected one of the largest pavilions – covering an area of 4,800 sq. m. Originally, Poland was not going to take part in Expo 2015, yet finally, the Polish government decided to prepare the display. The cost of Poland's participation in the Milan event is estimated at approx. PLN 57 million, however, the display was part-financed (three fourth of the sum) by the European Union with the European Regional Development Fund.

Such a situation should provoke us into posing a question whether – considering the high costs of preparing and running pavilions and taking into account universal access to the Internet – participation in world expositions still makes any sense. Yet that is a difficult question to be unequivocally answered. The Internet creates opportunity for presenting oneself on the Web, however, it triggers only sight and hearing, whereas the other senses of recipients of marketing activities are not activated. Participating in an Expo, on the other hand, enables visitors to “feel” exhibitors' offers with all the senses. This happens in a unique atmosphere created by face-to-face contact with representatives of many countries and through participation in multiple remarkable events that accompany the main exhibition. The answer for the question related to the reason behind participating in Expos will be given by the next exposition, which will be held in 2020 in Dubai. This event will demonstrate how many countries in the 21st century, nearly 170 years after the first universal exposition, are still capable of achieving the situation when exhibit marketing balances out costs of participation.

BIBLIOGRAPHY

- [1] Björner E., Berg P.O., *Strategic creation of experiences at Shanghai World Expo: a practice of communication*, "International Journal of Event and Festival Management", 2012/3(1).
- [2] Chen N., *Branding national images: The 2008 Beijing Summer Olympics, 2010 Shanghai World Expo, and 2010 Guangzhou Asian Games*, "Public Relations Review", 2012/38(5).
- [3] De Carlo M., Canali S., Pritchard A., Morgan N., *Moving Milan towards Expo 2015: designing culture into a city brand*, "Journal of Place Management and Development", 2009/2(1).
- [4] Deng C.Q., Li M., *A model of event-destination image transfer*, "Journal of Travel Research", 2014/53(1).
- [5] Deng C.Q., Li M., Shen H., *Developing a measurement scale for event image*, "Journal of Hospitality & Tourism Research", 2015/39(2).
- [6] *Expo Milano 2015. Short guide*, Mondadori Electa, 24 Ore Cultura, Milan 2015.
- [7] *Feeding the Planet, Energy for Life. Expo Milano 2015. Official Catalogue*, Mondadori Electa, 24 Ore Cultura, Milan 2015.
- [8] Kysiak M., *Architektura pawilonów wystawowych*, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1998.
- [9] Lee Ch.-K., Kang S.K., Lee Y.-K., *Segmentation of Mega Event Motivation: The Case of Expo 2010 Shanghai China*, "Asia Pacific Journal of Tourism Research", 2013/18(6).
- [10] Świątek W., *Trzy polskie pawilony na wystawy światowe Expo*, „Czasopismo Techniczne. Mechanika” 2012/26.
- [11] *Unmissable: Pavilion attractions*, <http://www.expo2015.org/en/unmissable--pavilion-attractions> (access on: 21.09.2015).
- [12] Xue K., Chen X., Yu M., *Can the World Expo change a city's image through foreign media reports?*, "Public Relations Review", 2012/38(5).
- [13] Yu L., Wang Ch., Seo J., *Mega event and destination brand: 2010 Shanghai Expo*, "International Journal of Event and Festival Management", 2012/3(1).

**ODZWIERCIEDLENIE STRATEGII PROMOCYJNEJ
W ZRÓŻNICOWANIU PAWILONÓW NARODOWYCH
PODCZAS EXPO 2015**

Celem artykułu jest sklasyfikowanie pawilonów przygotowanych na wystawy światowe. Przeprowadzając klasyfikację uwzględniono z jednej strony spójność poszczególnych wystąpień narodowych z założeniami brandingu narodowego, z drugiej zaś – dopasowanie tych wystąpień do przewodniej idei Expo. W pierwszej części artykułu przedstawiono kluczowe płaszczyzny i determinanty zarządzania projektem przygotowania oraz realizacji wystąpienia podczas wystawy światowej. Z kolei w drugiej części publikacji, na podstawie obserwacji przeprowadzonej przez autora podczas Expo 2015, zaproponowano podział pawilonów narodowych. W kontekście kreowania wizerunku kraju wyodrębniono: pawilony ściśle wpisujące się w aktualną strategię promocyjną kraju (spełniające założenia brandingu narodowego); pawilony niezwiązane z obecną koncepcją promowania kraju, wpisujące się jednak w aktualne uwarunkowania społeczne, gospodarcze lub polityczne; pawilony oderwane od długofalowej koncepcji promowania kraju i niewpisujące się w aktualne uwarunkowania społeczne, gospodarcze lub polityczne. Ponadto, biorąc pod uwagę dopasowanie wystąpień poszczególnych krajów do wiodącego tematu wydarzenia, wyodrębniono: pawilony ściśle nawiązujące do idei przewodniej wystawy; pawilony luźno nawiązujące do idei przewodniej wystawy; pawilony, w których wystąpił brak odwołania do idei przewodniej wystawy. W ramach egzemplifikacji przywołano ekspozycje: Etiopii, Francji, Niemiec, Słowacji, Słowenii i Turkmenistanu. Szczególną uwagę poświęcono polskiemu pawilonowi. Autor zaprezentował także krytyczne spojrzenie na zasadność uczestnictwa państw w wystawach świa-

towych w XXI wieku – w kontekście wysokich kosztów przygotowania ekspozycji, jak również powszechnego dostępu do internetu.

Słowa kluczowe: wystawy światowe, zarządzanie wystąpieniem targowym, architektura targowa, wizerunek kraju.

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OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN THE INTERNATIONAL CONDITION (CONSISTENT WITH OBJECTIVES THE ISO 45001 STANDARD)

Occupational health and safety management in business organizations increasingly entails the need for improvement measures aimed at ruling out or reducing the adverse impact of threats and untoward factors on the labor force. The result of measures taken is to get the conformity with the needs and expectations of employees, recognized as internal customers of this processes.

Creation of safe and hygienic work conditions in the company is inseparably connected with the need to undertake improvement activities, which are used to eliminate or reduce the negative impact of hazards and onerousness for employees. Similar factors occur during a use of systemic requirements.

Despite the adoption of uniform principles, the management systems are a lot varied. In effect is difficult of talking about a possible of total consistency. Each of these systems, covering relevant areas the organization activities usually operates as an independent system with its own management structure. Indicated difficulties are considered as one of the causes of development the ISO 45001 standard, which is international management standard of safety and health at work.

The paper enumerates significant reasons for developing the ISO 45001 standard. It outlines the key guidelines for drafting occupational health and safety management systems based on ISO 45001 requirements and in keeping with the provisions of OHSAS 18001 and ILO guidelines² applied to enhance systemic occupational health and safety management.

Keywords: occupational health and safety management, standardization, ISO 45001.

1. INTRODUCTION

The development of safe and hygienic working conditions in business organizations inextricably entails the need for improvement measures aimed at ruling out or reducing the adverse impact of threats and other untoward factors on the labor force. The need for such actions follows primarily from accident profiles which show relatively high accident rates and their substantial cost³. Their characteristics are shown in Table. 1.

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² *Guidelines on occupational safety and health management systems ILO-OSH 2001*, The International Labour Office, Geneva 2001.

³ *Accidents at work in 2010-2013. Statistical Information and Elaborations*, Central Statistical Office, Warsaw 2011-2014.

Table 1. The number of injured in accidents and accident rate in selected sectors of manufacturing.

Specification a – absolute number b - per 1000 persons employed		2011	2012	2013	2014
TOTAL	a	97222	91000	88267	88641
	b	8,3	7,78	7,54	7,45
Manufacturing	a	33431	30243	28095	28620
	b	13,70	12,47	11,64	11,59
- manufacture of wood and products of wood	a	2155	1798	1678	1725
	b	17,07	14,76	14,11	13,99
- manufacture of electrical equipment	a	1198	1080	1027	1040
	b	12,59	11,25	10,64	10,40
- repair and installation of machinery and equipment	a	1175	1189	1081	1110
	b	10,80	10,91	9,48	9,25
- manufacture of wearing apparel	a	421	346	326	296
	b	3,57	3,14	3,16	2,95
- manufacture of food product	a	6051	5735	5496	5433
	b	14,60	14,01	13,46	13,25

Source: *Accidents at work in 2010-2013, 2011-2014.*

Not only are accidents a substantial drain on budgets – they also pose serious social problems. It is therefore critical to identify tools for improving the working environment in ways similar to those employed in other fields of business so as to boost the efficiency of production, service provision and auxiliary functions. Hence, the working environment should be seen as part of the overall business environment in which an undertaking operates.

The improvement measures adopted to that end may rely on systemic management guidelines premised on the need to employ elements of the continuous improvement loop and, as a consequence, guaranteeing proper conditions for all those employed to work in the working environment. This is particularly crucial where business is conducted in the face of growing risks⁴. Once such systemic management procedures is in place, risks associated with the environment, the health and the safety of workers become targeted by formulating requirements designed to ensure the reduction of strains that result from failures to ensure proper working conditions for human operators⁵.

Despite the essential significance of occupational health and safety for business efficiency, the field is yet to be unified with standards that correspond to those pertaining to quality (the 9000 series of ISO), environment (the 14000 series of ISO), food safety

⁴ M. Waters, et al., *Exposure Estimation and Interpretation of Occupational Risk: Enhanced Information for the Occupational Risk Manager*, Journal of Occupational and Environmental Hygiene, 2015, 12:sup1, pp. 99-111.

⁵ A. Górny, *Zarządzanie ryzykiem zawodowym*, Wydawnictwo Politechniki Poznańskiej, Poznań 2011; J. Tabor, *Occupational Safety Management in the light of Causes Analysis of Accidents*, "Polish Journal of Management Studies", 2013, vol.7, pp.188-200; K. Kogi, *Work Improvement and Occupational Safety and Health Management Systems: Common Features and Research Needs*, "Industrial Health", 2002, vol. 40, no 2, pp. 121-133; Górny A., Rembiasz M., *Wpływ wieku zatrudnionych na wytyczne oceny i akceptowalności ryzyka zawodowego*, „Zeszyty Naukowe Politechniki Poznańskiej, Seria: Organizacja i Zarządzanie”, 2015, no 64, pp. 49-64 and *Occupational Health and Safety Management. BS OHSAS 18001 moving to ISO 45001*, Rapport of International Register of Certificated Auditors, Chartered Quality Institute, London 2014.

(ISO 22000) and others. The OHSAS 18001⁶ standard, which applies internationally, falls short of fulfilling all the criteria (most of which are formal) that need to be met for the standard to be recognized as a globally applicable instrument. Therefore it is worth to consider a need and scope of necessary actions, allowing indicate an action most important to take for integrating the management of occupational health and safety in international dimension. And because of the work performer for developing international standard for safety management (ISO 45001), take attempt to assess possibility of obtaining the expected benefits.

2. WORKING ENVIRONMENT IMPROVEMENTS IN BUSINESS

Improvements in the way business is done should be seen as a prerequisite for business success and an organization's survival⁷. Such improvements increase an organization's capacity to meet the needs and expectations of all concerned parties. They extend to efforts to improve the achievements of business partners and cover specifically⁸:

- products, services and processes as well as the relationships among them,
- organization structures,
- management systems,
- human and cultural considerations,
- infrastructures, working environments and technologies,
- relations with concerned parties.

Of major significance for promoting an organization's growth is for its improvement measures to be international in scope and based on international standards issued by European and global standardization bodies (ISO, CEN, ESTIM). Since organizations operate in an international corporate environment, they need to apply uniform management standards regardless of the specific countries and industries from which they stem. The most common links of this kind arise in international supply chains. In such an environment, cultural differences, laws, ethical principles, business and social practices, technologies, etc. may not significantly constrain them in their business pursuits⁹.

As a consequence, organizations need to develop integrated control systems to protect them from the risk of failing to ensure the required safety levels¹⁰. Such protection may well be viewed as the fundamental objective in developing the international ISO 45000 standards on occupational health and safety management that are based on uniform management structures applied across multiple fields of business.

⁶ BS OHSAS 18001:2007, *Occupational Health and Safety Management*, BSi, London.

⁷ S. Nenonen, *An operational model of safety management for service providers in manufacturing industry*, "The Service Industries Journal", 2013, vol. 33, iss. 1, pp. 99-114.

⁸ PN-EN ISO 9004:2010, *Managing for the sustained success of an organization. A quality management approach*. Polish Committee for Standardization, Warsaw.

⁹ see for example: S. Lachiewicz, M. Matejun (eds.), *Zarządzanie rozwojem organizacji w otoczeniu wielokulturowym*, Politechnika Łódzka, Łódź 2014; W. Karwowski and S. Trzcieliński (eds.), *Value Stream Activities Management*, IEA Press, Madison 2007.

¹⁰ K. Kazutaka, *Roles of Participatory Action-oriented Programs in Promoting Safety and Health at Work*, „Safety and Health at Work”, 2012, vol. 3, iss. 3, pp. 155-165; K. Kogi, *op. cit.*, pp. 121-131, and J. Tabor, J. Grabara, *Occupational Risk Management in Poland's Wooden Sector*, „Annals of Warsaw University of Life Sciences – SGGW. Forestry and Wood Technology”, 2013, no.84, pp. 234-240.

The recommendation is for the improvement measures adopted by process-based organizations to be followed also on process basis, i.e. based on the PDCA (Plan – Do – Check – Act) methodology¹¹. This allows them to ensure proper interactions among processes in keeping with the needs of the concerned parties. Success in completing the measures is crucial for achieving the desired maturity of an organization's management system. The improvement measures aimed at identifying a system's maturity are provided in Table 2.

Table 2. Description of improvement measures which increase management system maturity.

Maturity level	Maturity description
1	Improvement priorities are based on errors, complaints or financial criteria.
2	Improvement priorities are based on customer satisfaction data or improvement measures.
3	Improvement priorities are based on the needs and expectations of some concerned parties including suppliers and organization members.
4	Improvement priorities are based on trends and input data from other concerned parties as well as surveys of social, environmental and economic changes.
5	Improvement priorities are based on input data from concerned parties.

Source: PN-EN ISO 9004:2010, *Zarządzanie ukierunkowane na trwały sukces organizacji. Podejście wykorzystujące zarządzanie jakością (Managing for the sustained success of an organization. A quality management approach)*, PKN (Polish Committee for Standardization), Warsaw.

A set of comparable requirements should be incorporated into an occupational health and safety management system with proper account taken of the specific ways in which the relevant company operates and interacts with its environment. In such conditions, any irregularities as well as any ways to rectify them are linked with the need to ensure safe and healthy working conditions to workers and a proper working environment to the parties therein.

3. WORKING ENVIRONMENT IMPROVEMENTS – THE INTERNATIONAL DIMENSION

3.1. Domestic and international standardization

Despite similarities among them, various systems used to manage diverse fields of business cannot be considered to be fully consistent¹². Each system covering an organization's specific functions tends to operate independently and command its own

¹¹ A. Hamrol, *Zarządzanie jakością z przykładami*, Wydawnictwo naukowe PWN, Warszawa 2005, s. 113; J. Łunarski, *Zintegrowane systemy zarządzania – wspomaganie zarządzania systemami standardowymi*, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2011.

¹² N.J. Duijm, et al., *Management of health, safety and environment in process industry*, „Safety Science”, 2008, vol. 46, iss. 6, pp. 908-920.

separate management structure¹³. This is not changed by constructing systems on the basis of common guidelines or in attempts to integrate them by assigning to one system the requirements that allow one to assume they additionally apply to other fields of business.

To achieve complete consistency, one needs to combine or integrate various aspects of management into a single effective and efficient system. Such efforts have for years been taken by enterprises oriented at risk management¹⁴ and to improve safety levels making organizations more mature in terms of protection against accidents and incidents¹⁵.

However, international standardization bodies have so far failed to further such efforts. The integration they pursue usually involves adopting quality, environmental, food safety, information-related and other requirements in a continuous-improvement based management model¹⁶ which only appears to be universal.

An attempt to facilitate consistent measures has been made in drafting ISO 22301¹⁷. The standard defined requirements on the planning, establishing, deploying, running, monitoring, reviewing, maintaining and continually improving management systems across all areas of application. ISO 22301 is designed not only to be implemented in an organization but also to guide the development of management systems that rely on common requirements. It points to the basic achievable benefits to be derived from adopting management systems. The main goal in complying with the standard's guidelines is to facilitate operation despite the occurrence of adverse events. Specifically, the effort is aimed at:

- reducing the probability of the occurrence of such events,
- preparing the organization for their occurrence,
- ensuring the organization is prepared to adopt immediate improvement measures should such events occur,
- helping the organization find its way out of a crisis situation should such adverse events occur.

The requirements are assumed to form a common framework for the development of the management systems in question, especially in areas where varied conditions restrict the pursuit of business on an international scale¹⁸.

The international standard which first filled the gap in international occupational health and safety standards was OHSAS 18001:1999, currently replaced with OHSAS 18001:2007. Despite its global approval¹⁹ and continuous pressures on the ISO to develop

¹³ *Occupational Health and Safety Management. BS OHSAS 18001 moving to ISO 45001*, Rapport of International Register of Certificated Auditors, Chartered Quality Institute, London 2014.

¹⁴ *How to manage work health and safety risk. Code of practice*, Safe Work Australia, Canberra 2011.

¹⁵ J. Tabor, *Occupational Hazard Prevention in Manufacturing Systems*, „Applied Mechanics and Materials”, 2015, vol. 718, pp. 227-232 and N.J. Duijm, *op. cit.*, pp. 908-920.

¹⁶ *Occupational ...*, *op. cit.*; J. Łunarski, *op. cit.*

¹⁷ PN-EN ISO 22301:2014-11, *Societal security. Business continuity management systems. Requirements*, Polish Committee for Standardization, Warsaw.

¹⁸ A. Górny, *Zarządzanie bezpieczeństwem pracy w budowaniu przewagi konkurencyjnej przedsiębiorstwa*, „Zeszyty Naukowe Uniwersytetu Szczecińskiego, Seria: Ekonomiczne Problemy Usług”, 2009, no 540(34), pp. 295-302.

¹⁹ As of to date, ca. 90,000 certificates confirming the conformity of existing occupational health and safety management systems with the OHSAS 18001 standard have been published in 127 countries (ISO/CD 45001, *Occupational health and safety management systems. Requirements with guidance for use*, BSi, London 2014).

an international standard, no set of rules that could be considered a common international standard exists today. The need for such a document prompted a proper effort. In 2013, the ISO/PC 283 Technical Committee was formed tasked with developing ISO 45001²⁰. The schedule of work aimed at drafting and publishing the ISO 45001 standard is provided in Table 3.

Table 3. Schedule of works involved in drafting and issuing the ISO 45001 standard.

Completion time	Scope
June 2013	- draft design spec. and WD0
October 2013	- approved design spec. and WD1
July 2014	- CD for comment and ballot (3 months)
June 2015	- proposed DIS publication
July 2015	- proposed FDIS publication
October 2016	- proposed ISO 45001:2016 publication
proposed transition period	- 2-3 years from standard publication

Source: Author's work based on *Occupational Health and Safety Management. BS OHSAS 18001 moving to ISO 45001*, Rapport of International Register of Certificated Auditors, Chartered Quality Institute, London 2014 and A. Kowalkow, *Norma ISO 45001. Systemy zarządzania bezpieczeństwem i higieną pracy*, „Promotor”, 2014, no 11, pp. 50-52

ISO 45001 is developed on the basis of OHSAS 18001²¹ and the ANSI/ASSE A 10.38-2013²² working environment improvement guidelines. ISO 45001 authors have also referred to the occupational health and safety management system guidelines developed by the International Labor Organization²³.

The organization appointed to create the standard is the British Standards Institution. The International Labor Organization and other bodies responsible for ensuring safety at work play an important advisory role in the process, especially in areas in which differences of opinion arise and the existing rules appear to be inconsistent. One of the important sources of the difficulties are arise from the application of different national regulations in the ISO member countries. They are tailored to the specific functioning of enterprises and economic, social, local mentality and others conditions. Thus adopted with for use standard must take into account the expectations of all stakeholders and represent a consensus of these requirements. It is not an easy task.

3.2. Occupational health and safety management according to ISO 45001

The ISO 45001 standard is expected to provide guidelines for the development and application of systemic occupational health and safety principles by combining the

²⁰ *ISO 45001, New International Standard for Occupational Health & Safety Management Systems*, <http://www.bsigroup.com/en-GB/ohsas-18001-occupational-health-and-safety/ISO-45001> (date of access: September, 15, 2015).

²¹ BS OHSAS 18001:2007, *op. cit.*

²² ANSI/ASSE A10.38-2013, *Basic Elements of an Employer's Program to Provide a Safe and Healthful Work Environment*, The American Society of Safety Engineering, Park Ridge 2013.

²³ *Guidelines ...*, *op. cit.*

provisions of OHSAS 18001 and OHSAS 18002. This aspiration is reflected in the standard's official name of "Occupational health and safety management systems. Requirements and guidelines" (draft number: ISO/CD 45001²⁴). The currently disclosed version of the document is provided for information only as aid in the adequate interpretation of the requirements and their applicability in business practice with a view to reducing the cost of failures to ensure safe and healthy working conditions. The standard is structured in keeping with the rules currently enshrined in ISO 14001 (EMS) and ISO 9001 (QMS) and covers 10 key chapters, as shown in Table 4.

Table 4. Proposed new chapters of the ISO 45001 standard.

Chapter titles
1. Scope
2. Normative reference
3. Terms and definitions
4. Context of the organization
5. Leadership
6. Planning
7. Support
8. Operation
9. Performance evaluation
10. Improvement

Source: Author's research based on ISO/CD 45001, *Occupational health and safety management systems. Requirements with guidance for use*. BSi, London 2014 and A. Kowalkow, *Norma ISO 45001. Systemy zarządzania bezpieczeństwem i higieną pracy – wymogi i wytyczne stosowania*, „Promotor”, 2014, no 12, pp. 39-40.

The approach to systemic management adopted in the standard relies on the PDCA loop of continuous improvement centered on leadership and the responsibility of the management for an organization's actions. The structure of this approach and the relationships found in ISO 45001 are shown in Figure 1.

²⁴ ISO/CD 45001, *Occupational health and safety management systems. Requirements with guidance for use*, BSi, London 2014.

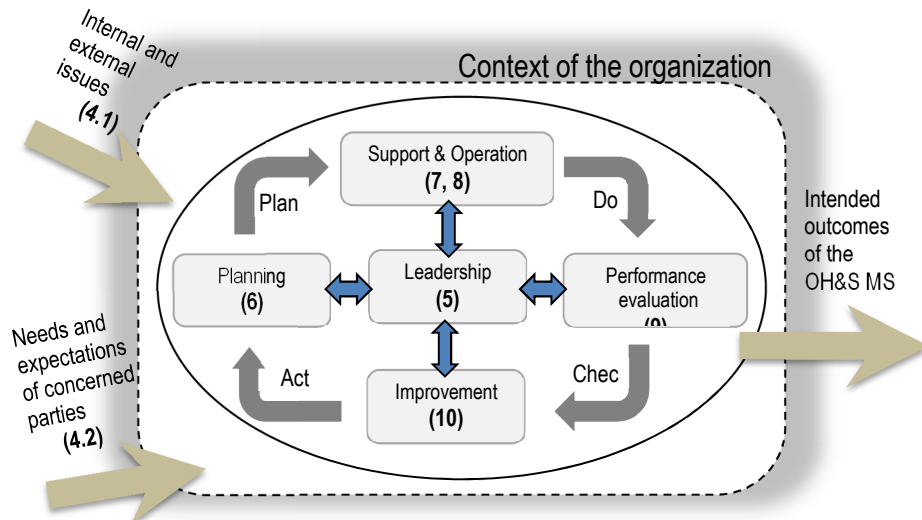


Figure 1. Diagram of interdependencies in the ISO 45001 standard.

Source: own elaboration based on CD/ISO 45001, *Occupational health and safety management systems. Requirements with guidance for use*. BSi, London.

Under the adopted approach, the standard attributes a significant role to an organization's context associated with its environment. To comply with the standard, organizations are obliged to constantly monitor their impact on their neighbors (such as the residents of the local community in which they do business). For conformity with system requirements, businesses are expected to view issues broadly rather than limiting themselves to the mere assessments of risks or to exercising operational control over their activities. It is essential to work closely with the local community and consult all concerned parties²⁵. This is in keeping with the guideline that requires that organizations be socially responsible²⁶. This new approach has been applied to risk assessment also beyond the strict bonds of occupational health and safety. The risk assessment is described as essential for ensuring proper conditions for the operation of humans in the working environment. To secure such conditions, one needs to identify the influence of uncertainty on the organization's footprint as well as the organization's ability to ensure its efforts are effective and to assess such efforts to measure its effectiveness accordingly to its managerial maturity (see Table 1). In order to ensure that the requirements have been met, businesses need to employ assessment indicators. The standard relies on dual evaluation of such effects which incorporates system effectiveness and system efficiency assessments covering:

- the organization's management and specifically its activities, the products it makes and the services it provides,

²⁵ K. Kazutaka, *op.cit.*, pp. 155-165.

²⁶ PN-ISO 26000:2012, *Guidance on social responsibility*, Polish Committee for Standardization, Warsaw and A. Górny, *Influence of corporate social responsibility (CSR) on safety culture*, „Management”, 2014, vol. 18, no. 1, pp. 43-57.

- occupational health and safety and specifically preventing worker injuries and ill health.

Notably, not all proposals made in the standard are consistent with European and Polish legislation. Workers, at whom the efforts under the standard are targeted, are defined as all members of the organization, all concerned parties and persons in the organization's care. However, occupational diseases which provide a measure of the effectiveness of the efforts made are treated as equal to any other health issues. The same applies to accidents at work which are defined to include incidents that do not constitute accidents per se. This approach is in keeping with the American view.

Particular emphasis has been placed on system scope, the organization's context, leadership, the concerned parties and information records. A brief outline of selected fields of systemic occupational health and safety management in line with ISO 45001 guidelines is shown in Table 5.

Table 5. Selected requirement areas in ISO 45001.

Section in ISO/CD	Chapter title	Nature of requirements and sample issues incorporated into management system
4.3	Scope of the OHS management system	The occupational health and safety management system extends to all activities, products and services whose delivery in keeping with systemic guidelines affects safety levels within an organization. Such activities should be monitored and assessed in terms of the identified impacts. The duty to monitor and evaluate the impacts includes any functions that have been outsourced and any external processes which affect an organization's operations. The organization has a duty to assess the severity of such impacts. Sample issues: – in adhering to the adopted occupational safety guidelines, an organization needs to account for existing and potential threats to the occupational safety of workers performing outsourced work and conducting activities, producing products or providing services to the organization, – supplies-related requirements must be drafted with due account taken of existing and potential threats to the organization's workers performing outsourced work and conducting activities, producing products or providing services to the organization.
4.1	Context of the organization	The measures undertaken are aimed at ensuring that essential issues are properly understood. This applies in particular to issues having either a positive or a negative impact on the occupational health and safety management system in place and the

Section in ISO/CD	Chapter title	Nature of requirements and sample issues incorporated into management system
		<p>employed workers. It is critical that the organization achieve its intended occupational health and safety goals pertaining to its commitments in the field, recognize the laws and other regulations the organization agreed to comply with, identify threats and find ways to prevent them.</p> <p>Sample issues:</p> <ul style="list-style-type: none"> – external features (culture in the business environment, social issues, political factors, legal requirements, available funding and technologies, business environment, international, domestic, regional and local competition), – internal features and conditions affecting the organization's operation (management, organizational structure, role and responsibility of workers, organization culture).
5	Leadership	<p>The management are responsible for ensuring a complete integration of business processes with system requirements. The management are to display a commitment to act systemically to improve occupational safety. Such commitment should include the direct involvement of the management in any actions undertaken. Such involvement may not take the form of delegating tasks to other people expected to represent the management.</p> <p>Sample issues:</p> <ul style="list-style-type: none"> – incorporation of the efficiency of occupational health and safety management in strategic planning, – keeping concerned parties up to date on increases in management system efficiency achieved while ensuring compliance with relevant requirements, – support for persons striving to improve the efficiency of the occupational safety management system, – guidance extended to individuals who strive to improve the efficiency of the occupational safety management system, – the selection (from among top management executives) of a person directly responsible for occupational health and safety policies and the running of the occupational health and safety management system.

Section in ISO/CD	Chapter title	Nature of requirements and sample issues incorporated into management system
4.2	Concerned parties	The organization is obliged to identify all parties whose actions affect the operation of the occupational health and safety management system and define the requirements that such parties are to meet. It is also essential to identify requirements, specify when they will apply and assess and acknowledge conformity. Once adopted, the measures are to be seen as mandatory. Sample issues: – mandatory requirements (principles) and legislative rules (primary laws and implementing acts), – voluntary commitments by concerned parties (whose adoption has been approved by the organization).

Source: Author's work based on *Occupational Health and Safety Management. BS OHSAS 18001 moving to ISO 45001*, Rapport of International Register of Certificated Auditors, Chartered Quality Institute, London 2014 and A. Kowalkow, *Norma ISO 45001. Systemy zarządzania bezpieczeństwem i higieną pracy – wymogi i wytyczne stosowania*, „Promotor”, 2014, no 12, pp. 39-40.

In outlining the ISO 45001 guidelines²⁷, one can note a close similarity to guidelines applying to the management of other fields of enterprise activities. The ISO/CD 45001 standard offers a number of new requirements which have not been seen in the existing documents used as a basis for its drafting and which are insignificant for compliance with ISO 9001. ISO/CD 45001 does not discuss the use of corrective or preventive actions but rather refers exclusively to improvement measures. This should be viewed as part of the concept of the uniform approach to improvement measures in other management systems (applicable to quality and the natural environment). However, the adopted principles may not be considered to be exactly the same as the systemic management guidelines governing other fields of a business organization's activities. The reason for the substantial number of differences is that the rules need to account for specific requirements pertaining to individual fields of management.

3.3. Benefits of employing principles of systemic management of occupational health and safety

The implementation of systemic occupational health and safety management principles is the most effective way to improve safety at work and modify worker behaviors and consequently shape an organization's safety climate and culture²⁸. However, to achieve

²⁷ ISO/CD 45001, *op. cit.*

²⁸ K. Frick, *Worker influence on voluntary OHS management systems – A review of its ends and means*, „Safety Science”, 2011, vol. 49, iss. 7, pp. 974-987; B. Fernández-Muñiz, et al., *Safety management system: Development and validation of a multidimensional scale*, „J. of Loss Prevention in Process Industries”, 2007, vol. 20, iss. 1, pp. 52-68, and A. Górny, *Zarządzanie bezpieczeństwem pracy jako czynnik przewagi konkurencyjnej*

the desired results, the workers and the management and occupational health and safety experts need to join forces and make shared commitments²⁹.

By applying a system approach to occupational safety at work based on international standards, organizations stand to gain a number of benefits which will be enjoyed by all parties affected by the standard's requirements. A number of these benefits tie directly to systemic measures. The systemic measures require and allow organizations to³⁰:

- formulate their improvement policies thereby setting the organization's OHS-related goals helping them to complete safety improvement tasks,
- launch and complete actions based on the PDCA improvement model which is aligned with the improvement principles applying to other fields of an organization's activities providing for more unity across management systems,
- attribute a special significance to continuous improvements and the need to ensure effectiveness thereby reducing the burden of accidents and health issues at work,
- proactively engage in improving the effectiveness of occupational-health-and-safety-related measures aimed at preventing injuries and ill health,
- promote health education while treating training as part of continuous improvement crucial for the effectiveness of measures,
- take systemic measures, most commonly in the form of an internal audit or a management review,
- adopt the necessary internal and external solutions and apply measures to prevent hazards and strenuousness accordingly to their nature – such measures should be seen as facilitating systems integration,
- address inconsistencies and the need to take improvement measures on a continuous basis – this too should be seen as a boost to management system integration,
- make the management responsible for compliance with laws and other regulations to which the organization has committed itself to adhere,
- view risk assessment as a pivotal issue determining the effectiveness of continuous improvement and the successful establishment of safe working conditions,
- as part of ensuring readiness for proper response in case of failures, take proper action to prepare for emergencies and plan and test viable emergency procedures.

Defined in the above manner, the achieved benefits result from deploying improvement measures in five key areas, i.e.:

- the identification of internal and external issues,

przedsiębiorstwa, „Zeszyty Naukowe Politechniki Poznańskiej, Seria: Organizacja i Zarządzanie”, 2009, no 54, pp. 15-25.

²⁹ A. Górny, *Zarządzanie bezpieczeństwem pracy jako ...*, *op. cit.*, pp. 15-25 and J. Grabara, *Proceduralno-podmiotowy model zarządzania bezpieczeństwem i higieną pracy*, in: J. Tabor (red.), *Zarządzanie bezpieczeństwem i higieną pracy. Techniczne, organizacyjne i ludzkie uwarunkowania bezpieczeństwa pracy*, vol 3, pp. 178-196, Sekcja Wydawnictw Wydziału Zarządzania Politechniki Częstochowskiej, Częstochowa 2012.

³⁰ A. Górny, *Humanistyczne aspekty zarządzania bezpieczeństwem pracy*, „Zeszyty Naukowe Uniwersytetu Szczecińskiego, no 849, *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania*”, 2015, no 39, vol. 4, pp. 43-56; A. Górny, *Use of Quality Management Principles in the Shaping of Work Environment*. in: C. Stephanidis (ed.), *Posters Extended Abstracts: International Conference, HCI International 2015 (part II), „Communications in Computer and Information Science”*, 2015, vol. 529, pp. 136-142 and *Occupational ...*, *op. cit.*

- elimination of risk in view of the nature of threats and strain and the feasibility of specific improvement measures,
- commitment on the part of the organization to comply with relevant laws and regulations,
- preparedness for an immediate emergency response, preceded by emergency risk analysis and testing in simulated conditions by applying emergency response procedures.

The hierarchy of improvement measures should reflect commonly applied guidelines and be approved by the workers, their supervisors and auditors. For their proper implementation, the measures need to be preceded by operational planning and proper controls. Contrary to OHSAS, where the measures are seen as optional, ISO/CD 45001 stipulates them as mandatory.

The range of benefits described hereinabove is designed primarily to eliminate or mitigate risks. Under OHSAS, many actions are seen as compulsory - these include the need to apply a specific hierarchy of the measures designed to reduce risks and improve safety³¹ and the need for the political engagement of the management in risk control. Of particular importance in ISO 45001 is³²:

- risk management,
- ongoing risk assessment,
- measures aimed at preventing and/or reducing the impact of the existing threats,
- the need for verifying continually maintained compliance of the occupational health and safety status with legislative and other requirements,
- safety oversight exercised during the performance of outsourced processes,
- the application of assessment indicators to oversee the effectiveness of occupational health and safety measures,
- the monitoring, measuring, analyzing and evaluating of actions pertaining to occupational safety improvements (in terms of effectiveness, current status and trends).

The outcomes of the measures taken should be seen as benefits derived from employing systemic occupational health and safety management to improve worker health³³.

4. SUMMARY

Once adopted, the international standard ISO 45001 will undoubtedly facilitate the development of proper working conditions. Although having the standard in place alone will not suffice to improve occupational safety³⁴, the standard may be viewed as a tool enabling an organization to implement improvements while easing its integration with the management systems that are already in place³⁵. Considerable similarities can be seen

³¹ A. Górny, *op. cit.*; A. Junevičius, D. Gelžinyte, *Employees health and safety requirements and regulations in the European Union*, „European Integration Studies”, 2009, iss. 3, pp. 76-85 and rozporządzenie Ministra Pracy i Polityki Socjalnej z dnia 26 września 1997 r. w sprawie ogólnych przepisów bezpieczeństwa i higieny pracy; tekst jedn.: Dz. U., 2003, nr 169, poz. 1650, ze zm.

³² *Occupational ...*, *op. cit.*

³³ A. Górny, *Influence ...*, *op. cit.*, pp. 43-57 and K. Frick, *op. cit.*, pp. 974-987.

³⁴ K. Frick, *Ibidem*, pp. 974-987.

³⁵ A. Górny, *Application of quality shaping methods in the work environment improvement. A case of theoretical frames*, „Management Systems in Production Engineering”, 2014, no. 3(14), pp. 106-111.

between OHSAS 18001 and ISO/CD 45001. Such similarities result from approaching OHSAS 18001 as a basis for drafting the ISO standard. The need for integration was a central aim pursued by its authors driving changes in occupational health and safety management systems. However, in many areas, the new standard proposes an approach that is specific for the field of occupational health and safety. For instance, the requirements concerning documentation and the obligation to keep records have been placed in a single section and subdivided into the three areas of:

- general requirements,
- principles governing the drafting and updating of documents,
- control over documented information.

The above category encompasses not only documents and records but also information stored in e.g. smartphones, tablets or other electronic media, which brings the standard up to date with today's technological advances. By doing so, the ISO 45001 standard accommodates the needs of contemporary enterprises.

Nevertheless, significant discrepancies need to be noted between the standard and existing laws. The most substantial of them appear to be the definitions of risk, workers and the workplace. Such discrepancies will certainly require elaboration and interpretations to restore consistency between the standard and the existing laws.

LITERATURA

- [1] *Accidents at work in 2010-2013. Statistical Information and Elaborations*, Central Statistical Office, Warsaw 2011-2014.
- [2] ANSI/ASSE A10.38-2013, *Basic Elements of an Employer's Program to Provide a Safe and Healthful Work Environment*, The American Society of Safety Engineering, Park Ridge 2013.
- [3] BS OHSAS 18001:2007, *Occupational Health and Safety Management*, BSi, London.
- [4] Duijm N.J., Fiévez C., Gerbec M., Hauptmanns U., Konstandinidou M., *Management of health, safety and environment in process industry*, „Safety Science”, vol. 46, iss. 6, pp. 908-920.
- [5] Fernández-Muñiz B., Montes-Peón J.M., Vázquez-Ordás C.J., *Safety management system: Development and validation of a multidimensional scale*, „Journal of Loss Prevention in Process Industries”, 2007, vol. 20, iss. 1, pp. 52-68.
- [6] Frick K., *Worker influence on voluntary OHS management systems – A review of its ends and means*, „Safety Science”, 2011, vol. 49, iss. 7, pp. 974-987.
- [7] Górný A., *Application of quality shaping methods in the work environment improvement. A case of theoretical frames*. „Management Systems in Production Engineering”, 2014, no. 3(14), pp. 106-111.
- [8] Górný A., *Humanistyczne aspekty zarządzania bezpieczeństwem pracy*, „Zeszyty Naukowe Uniwersytetu Szczecińskiego, no 849, Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania”, 2015, no 39, t. 4, pp. 43-56.
- [9] Górný A., *Influence of corporate social responsibility (CSR) on safety culture*, „Management”, 2014, vol. 18, no. 1, pp. 43-57.
- [10] Górný A., *Use of Quality Management Principles in the Shaping of Work Environment*, in: C. Stephanidis (ed.), *Posters Extended Abstracts: International Conference, HCI International 2015 (part II)*, „Communications in Computer and Information Science”, 2015, vol. 529, pp. 136-142.
- [11] Górný A., Rembiasz M., *Wpływ wieku zatrudnionych na wytyczne oceny i akceptowalności ryzyka zawodowego*, „Zeszyty Naukowe Politechniki Poznańskiej, Seria: Organizacja i Zarządzanie”, 2015, no 64, pp. 49-64.

- [12] Górny A., *Zarządzanie bezpieczeństwem pracy jako czynnik przewagi konkurencyjnej przedsiębiorstwa*, „Zeszyty Naukowe Politechniki Poznańskiej, Seria: Organizacja i Zarządzanie”, 2009, no 54, pp. 15-25.
- [13] Górny A., *Zarządzanie bezpieczeństwem pracy w budowaniu przewagi konkurencyjnej przedsiębiorstwa*, „Zeszyty Naukowe Uniwersytetu Szczecińskiego, Seria: Ekonomiczne Problemy Usług”, 2009, no 540 (34), pp. 295-302.
- [14] Górny A., *Zarządzanie ryzykiem zawodowym*, Wydawnictwo Politechniki Poznańskiej, Poznań 2011.
- [15] Grabara J., *Proceduralno-podmiotowy model zarządzania bezpieczeństwem i higieną pracy*, in: J. Tabor (ed.), *Zarządzanie bezpieczeństwem i higieną pracy. Techniczne, organizacyjne i ludzkie uwarunkowania bezpieczeństwa pracy*, vol. 3. pp. 178-196, Sekcja Wydawnictw Wydziału Zarządzania Politechniki Częstochowskiej, Częstochowa 2012.
- [16] *Guidelines on occupational safety and health management systems ILO-OSH 2001*, The International Labour Office, Geneva 2001.
- [17] Hamrol A., *Zarządzanie jakością z przykładami*, Wydawnictwo Naukowe PWN, Warszawa 2005.
- [18] *How to manage work health and safety risk. Code of practice*, Safe Work Australia, Canberra 2011.
- [19] ISO/CD 45001, *Occupational health and safety management systems. Requirements with guidance for use*, BSi, London 2014.
- [20] *ISO 45001, New International Standard for Occupational Health & Safety Management Systems*. <http://www.bsigroup.com/en-GB/ohsas-18001-occupational-health-and-safety/ISO-45001> (date of access: September, 15, 2015).
- [21] Junevičius A., Gelžinyte D., *Employees health and safety requirements and regulations in the European Union*, „European Integration Studies”, 2009, iss. 3, pp. 76-85.
- [22] Karwowski W., Trzeciński S. (eds.), *Value Stream Activities Management*, IEA Press, Madison 2007.
- [23] Kazutaka K., *Roles of Participatory Action-oriented Programs in Promoting Safety and Health at Work*, „Safety and Health at Work”, 2012, vol. 3, iss. 3, pp. 155-165.
- [24] Kogi K., *Work Improvement and Occupational Safety and Health Management Systems: Common Features and Research Needs*, „Industrial Health”, 2002, vol. 40, no 2, pp. 121-133.
- [25] Kowalkow A., *Norma ISO 45001. Systemy zarządzania bezpieczeństwem i higieną pracy*, „Promotor”, 2014, no 11, pp. 50-52.
- [26] Kowalkow A., *Norma ISO 45001. Systemy zarządzania bezpieczeństwem i higieną pracy – wymogi i wytyczne stosowania*, „Promotor”, 2014, no 12, pp. 39-40.
- [27] Lachiewicz S., Matejun M. (eds.), *Zarządzanie rozwojem organizacji w otoczeniu wielokulturowym*, Politechnika Łódzka, Łódź 2014.
- [28] Łunarski J., *Zintegrowane systemy zarządzania – wspomaganie zarządzania systemami standardowymi*, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2011.
- [29] Nenonen S., *An operational model of safety management for service providers in manufacturing industry*, „The Service Industries Journal”, 2013, vol. 33, iss. 1, pp. 99-114.
- [30] *Occupational Health and Safety Management. BS OHSAS 18001 moving to ISO 45001*, Rapport of International Register of Certificated Auditors, Chartered Quality Institute, London 2014.
- [31] PN-ISO 26000:2012, *Guidance on social responsibility*, Polish Committee for Standardization, Warsaw 2012.
- [32] PN-EN ISO 9004:2010, *Managing for the sustained success of an organization. A quality management approach*, Polish Committee for Standardization, Warsaw 2010.
- [33] PN-EN ISO 22301:2014-11, *Common security. Business continuity management systems. Requirements*, Polish Committee for Standardization, Warsaw 2014.
- [34] Rozporządzenie Ministra Pracy i Polityki Socjalnej z dnia 26 września 1997 r., w sprawie ogólnych przepisów bezpieczeństwa i higieny pracy; tekst jedn.: Dz. U, 2003, nr 169, poz. 1650, ze zm.

- [35] Tabor J., Grabara J., *Occupational Risk Management in Poland's Wooden Sector*, Annals of Warsaw University of Life Sciences – SGGW, „Forestry and Wood Technology”, 2013, no.84, pp. 234-240.
- [36] Tabor J., *Occupational Safety Management in the light of Causes Analysis of Accidents*, „Polish Journal of Management Studies”, 2013, vol.7, pp.188-200.
- [37] Tabor J., *Occupational Hazard Prevention in Manufacturing Systems*, „Applied Mechanics and Materials”, 2015, vol.718, pp. 227-232.
- [38] Waters M., McKernan L., Maier A., Jayjock M., Schaeffer V., Brosseau L., *Exposure Estimation and Interpretation of Occupational Risk: Enhanced Information for the Occupational Risk Manager*, Journal of Occupational and Environmental Hygiene, 2015, 12:sup1, pp. 99-111.

ZARZĄDZANIE BEZPIECZEŃSTWEM I HIGIENĄ PRACY W WYMIARZE MIĘDZYNARODOWYM (ZGODNYM Z ZAŁOŻENIAMI NORMY ISO 45001)

Realizowane w przedsiębiorstwie zarządzanie bezpieczeństwem i higieną pracy wymaga wprowadzenia a następnie doskonalenia rozwiązań pozwalających wyeliminować lub ograniczyć negatywny wpływ zagrożeń i uciążliwości na zatrudnionych. Zazwyczaj stosowane w tym celu rozwiązania oparte są na zasadach systemowego zarządzania, wykorzystujących pętlę ciągłego doskonalenia, tym samym umożliwiając realizację zadań na coraz wyższym poziomie jakościowym. Efektem podejmowanych działań jest uzyskanie zgodności z potrzebami i oczekiwaniami zatrudnionych, uznawanych za wewnętrznych klientów realizowanych procesów. W podejmowanych działaniach pracownicy mogą być traktowani zarówno jako ich adresaci oraz weryfikatorzy ich skuteczności.

Kształtowanie bezpiecznych i higienicznych warunków wykonywania pracy w przedsiębiorstwie nierozdzielnie związane jest z koniecznością podjęcia działań doskonalących, służących eliminacji lub ograniczeniu negatywnego oddziaływania zagrożeń i uciążliwości na zatrudnionych. Analogiczne uwarunkowania występują podczas stosowania wymagań systemowych.

Pomimo stosowania jednolitych zasad systemy zarządzania różnią się w istotny sposób, czego skutkiem jest trudność mówienia o możliwej całkowitej spójności systemów. Każdy ze stosowanych systemów, obejmujących adekwatne obszary działań organizacji zazwyczaj funkcjonuje jako niezależny system z własną strukturą zarządzania. Nie zmienia tego podejmowanie prób integracji systemów, będącej najczęściej przypisaniem do jednego systemu wymagań pozwalających przyjąć, że obejmują również inne obszary działalności.

Wskazywane trudności traktowane są jako jedna przyczyn opracowania normy ISO 45001, będącej międzynarodowym standardem zarządzania dotyczącym bezpieczeństwa i higieny pracy.

W opracowaniu wskazano na istotne powody rozwijania standardu ISO 45001 (określającego zasady stosowania systemowego zarządzania bezpieczeństwem i higieną pracy). Opisano podstawowe wytyczne dotyczące opracowywania systemów zarządzania bezpieczeństwem pracy oparte na normie ISO 45001 oraz wymagania zgodne z wytycznymi OHSAS 18001 i MOP, stosowanymi w celu wzmocnienia znaczenia systemowego zarządzania bezpieczeństwem i higieną w przedsiębiorstwie.

Słowa kluczowe: zarządzanie bezpieczeństwem i higieną pracy, normalizacja, ISO 45001.

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E-BRANDING vs. TRADITIONAL BRANDING

Television, radio and press for many years reigned supreme in the marketing market, and made it possible to reach out effectively to a wide audience. However, we are now observing a decreasing effectiveness of traditional forms of brand communication (communication through TV, in the press, on the radio or by the use of outdoor advertising). Young audiences - representatives of generations Y and Z - expect a completely different message from their parents or grandparents. They require a message to be as interactive as possible, as well as personalized, and they have much less trust in traditional forms of advertising. This all means that the importance of e-branding is constantly growing. The objective of this article is to describe the traditional ways of creating brands and of brand management, and to compare them with e-branding, taking into account the characteristics of forms as well as the most common distribution channels and ways of formulating messages. Traditional branding and e-branding are here discussed while remaining in the context of purchase choices, made by representatives of specific generations. Moreover, the article points to important differences in both described forms of brand creation, as well as - based on the newest examples of image campaigns and advertising for household names proves e-branding to have greater effectiveness in the contemporary world. This is happening because e-branding gives far greater possibilities of establishing personal rapports with customers, which is of great significance; but what is even more essential, as those from generation Z expect fully personalized announcements, this will start to dominate the market.

Keywords: branding, e-branding, traditional branding, brand awareness, creating a brand.

1. INTRODUCTION

Over the past decades TV, press and radio have allowed advertisers to reach the mass consumer, providing them with a controlled message. Still into the 1990s, a one-way marketing communication was applied - a brand usually built its image and its value through announcements directed at consumers via the press, television, radio or through traditional outdoor actions: on posters, billboards or leaflets. However, at present, in a world dominated by new technologies, the effectiveness of traditional announcements is decreasing. According to the McKinsey survey, the effectiveness of a TV commercial in the USA is now estimated as on the level of one third of the results that were achieved only 20 years ago.² The Ehrenberg-Baas Institute for Science Marketing has conducted a survey showing that only every sixth advertisement broadcast on television is remembered and correctly associated with the brand six days after transmission.³ The audience of the

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² J. Kall, *Branding on smartphone. Brand mobile communication*. Wolters Kluwer SA, Warsaw 2015, p.11

³ *Ibidem*, p.11.

largest TV stations⁴ is also dwindling, as well as the average time spent in front of the television over twenty-four hours falling, especially in the youngest age groups of TV users.⁵ Customers demand the ability to interact, which is why besides traditional branding, e-branding is increasingly appearing. Effective communication requires that the brand is present in networks - as the research shows, the revenue growth of businesses that use social media while communicating with customers is a quarter higher than in the case of companies which do not use them.⁶ Communicating brands online allows interactivity, which makes it possible to collect feedback on the reaction to the produced message, and gather opinions of products, activities, services. The Internet facilitates communication with the online brand-consumer, enabling instant information sharing and a response to new emerging circumstances. Currently, the potential customer develops their opinion about the brand, assesses its credibility and forms an opinion whether the brand inspires confidence primarily on the basis of its image on the Internet.

2. TRADITIONAL BRANDING

As shown by Elliot and Percy a brand actually exists only in the mind of the consumer, and therefore its management (branding) is the management of one's perception. The brand is the entire range (not only the name, trademark, graphics, etc.), which seeks to assure buyers of something unique - either in its size, utility or symbolically, and thus influence the selection process by offering more than a 'no name' product", i.e. one that does not have a clearly defined brand.⁷

The aim of both traditional branding and e-branding is:⁸

a) Providing information about the brand

Branding messages addressed to recipients have the aim not only to sell, but to make the same brand marketable by providing information about its usefulness.

b) Branding

Since people generally prefer what is known, the first step in building a brand image is to build awareness of it among its consumers.

a) Consumer involvement in a relationship with the brand

The purpose of branding is to create parallels to the line between the brand and receiver, which makes the brand become more attractive, desirable, worthy of recommendation in the recipient's eyes and the recipient, therefore, since the brand corresponds to his fantasies, becomes loyal to her.

⁴ According to a study by Palmieri and Lee it showed that in the years 2010-14 the audience of four largest television stations in the United States decreased by 21% in the age group 18-49, source: [http://www.bloomberg.com/bw/articles/2014-05-15 / tv-networks-fight-with-netflix-miniseries-revival](http://www.bloomberg.com/bw/articles/2014-05-15/tv-networks-fight-with-netflix-miniseries-revival) (access: 14.10.2015).

⁵ M. Połowianiuk, *Television has no future*, source: <http://www.spidersweb.pl/2015/07/telewizja-nie-ma-przyszlosci.html> (access: 14.10.2015).

⁶ J. Kall, *op. cit.*, p. 167.

⁷ Por. J. Kall, *op. cit.*, p. 16.

⁸ J. Kall, *op. cit.*, p. 28.

3. TRADITIONAL BRANDING FEATURES

The main distinguishing feature of traditional branding is a one-way communication channel with the customer. A narrow elite of broadcasters define the content of the message. Also linked to this is the monopoly of traditional media communications. In principle, in transmissions of this kind there is no place for content created by consumers, not counting those that pass the verification stage by the sender (for example on letter pages in magazines). A high cost of access to marketing tools is associated with this and as a result it confines access to a limited group of broadcasters.⁹

4. DISTRIBUTION CHANNELS

Traditional branding uses specific channels of communication: television, radio, press and outdoor advertising. Among traditional ways of branding may also be included sponsorship activities and organization of events and entertainments. For years' traditional media were successfully used in the process of creating a brand image. Globally, today the most often used medium in marketing is television, where market shares are 40%, followed by promotion in the press (magazines and newspapers) - 25% of global advertising budgets.¹⁰ Although in the last decade a considerable outflow of funds towards new media has been observed, traditional marketing still accounts for almost 78% of the budget spent on advertising campaigns.¹¹ Broadcasters happily use traditional channels of communication, in particular when branding is addressed to the older generations.

1. Personal recommendation

Personal recommendation is the most effective types of marketing. This concerns in particular the recommendation of friends. Research shows that 90% of consumers trust other people's recommendations.¹² In the traditional range of marketing tools it can be found, among others, as buzz marketing. Its role is to reach out to the recipient with direct communication, which takes the form of "spontaneous" recommendation. The aim of this strategy is to create a "noise" around the promoted product, service or person.¹³ An example of such activities in the traditional form could be sending free products to volunteers (who then share the experience with friends) or finding a star celebrity who will become a brand ambassador, supporting the brand with their own image. Nevertheless, still the most effective form of marketing is friends' recommendations.

2. Out-of-home commercials

Creating images for OOH (Out-Of-Home) advertising is one of the most dominant tools of traditional branding. In Poland the money spent on outdoor campaigns for several years has remained at a similar level – in 2013 and 2014 it amounted to 450 million zlo-

⁹ J. Królewski, P. Sala (red.), *E-marketing. Contemporary trends. Starter Pack*, PWN, Warsaw 2014, p. 13.

¹⁰ J. Kall, *op. cit.*, p. 194.

¹¹ *Ibidem*, p. 15.

¹² *Ibidem*, p. 17.

¹³ G. M. Thomas, *Building the buzz in the hive mind*, „Journal of Consumer Behavior”, vol.4/2004, p. 64-72.

tys.¹⁴This implies an ability to reach preferred groups, primarily urban residents, where the use of outdoor advertising is rampant. This tool, of OOH advertising, allows a flexible adaptation to the target audience, by taking into account the criteria of the territory (a specific city, region, state, but also for example all the private universities in the country). The message coming from outdoor advertising focuses primarily on an image, so that the advertiser can determine precisely the image of the brand, promoted by the advertisements. A unique feature of outdoor advertising is its inevitable contact with the content by the recipient. It is not possible for the recipient not to perceive the communication flowing from the media, so inadvertently they memorize the broadcasted message. Apart from its traditional form, outdoor advertising can still be used in innovative branding campaigns. An example of this is the campaign for the IBM 2013, that used copyrighted elements of industrial design (e.g. shelters to protect pedestrians from the rain, benches) to place the brand logo, thus giving it an association with innovation and user-friendliness.¹⁵

3. The internet as the dominant communication channel

Technological development is ensuring that when creating a brand image, a greater and greater part of the potential target message recipients are Internet users. Especially among the younger generations, it is the dominant communication channel. Currently in the European Union, over 70% of people use the Internet, of which 47% do so via smartphones and tablets, with the Internet constantly at hand.¹⁶ The same thing is happening in Poland: 63% of Poles use the Internet¹⁷ and 71.9% of households have access to the network. Nearly two-fifths of Poles (39%) also have an account in social media.¹⁸

Mindshare Poland research has determined that Poles spend every day:¹⁹

- a) 3-4 hours in front of a laptop
- b) 3 hours in front of a computer
- c) 2.6 hours on a smartphone
- d) 2 hours in front of a TV
- e) 1.6 hours in front of a tablet

These data allow us to notice a huge difference in the time spent on television communication (2 hrs. per day) and online messages (in total on all devices with internet access – 12.2 hrs. per day).

In developed countries - the US and the UK – over the past five years the amount of time spent on mobile devices has increased seven times.²⁰ Devices with network access have a significant advantage over traditional media (television, radio, press).

¹⁴ IGRZ report on the results of OOH advertising in Poland in 2014, source: <http://igrz.home.pl/Raporty/2014%20RAPORT%20ROCZNY%20IGRZ.pdf> (access: 10.14.2015).

¹⁵ D. Kiefaber, *IBM's Outdoor Ads Actually Try to Be Useful and Make Cities Better*, source: <http://www.adweek.com/adfreak/ibms-outdoor-ads-actually-try-be-useful-and-make-cities-better-150091> (access: 14.10.2015).

¹⁶ S. Trzeciak, *Public image on the web. Who are you in the network?*, Helion, Gliwice 2015, p. 23.

¹⁷ The Communication Research CBOS No. 82/2014, Internet users in 2014, source: http://www.cbos.pl/SPISKOM.POL/2014/K_082_14.PDF (access 14.10.2015).

¹⁸ The Communication Research CBOS No. 82/2014, Internet users in 2014, source: http://www.cbos.pl/SPISKOM.POL/2014/K_082_14.PDF (accessed 14.10.2015).

¹⁹ Por. J. Kall, *op.cit.*, p. 75.

Because of this trend, consumers' decisions are also increasingly made based on information available on the Internet; users check goods and services on online forums, they rely on friends' recommendations, review the available channels of brand information on social media.

5. E-BRANDING AND ITS FEATURES

E-branding, like traditional branding, aims to create a specific brand image, but to create it and manage it by using the tools and opportunities offered by the internet. It has the same objectives as traditional branding but both forms are different in many aspects. E-branding, unlike traditional branding is characterized by:

a) Constant presence

Traditional forms of marketing communications such as TV advertisements, in the press or on leaflets constitute an instantaneous message. Communication on the Internet is constant; all the contents are constantly on websites or social media profiles. They can be reached by every internet user from anywhere in the world. The cost of an online presence, as opposed to the traditional forms of branding is small, especially considering its stability.

b) Interactivity

Communication conducted on the internet allows one side of the communication (radio advertising, television speech) to interact with the customer²¹. Social media users can follow the channels of individual brands, they are kept informed about the activities of their favourite brands, have the opportunity to ask questions, evaluate, provide feedback on products and services so that businesses or individuals can react more quickly on user ratings, and then match up their actions and branding strategies to the needs and expectations of their customers.

c) Speed

Image campaigns in the traditional media (TV, press, outdoor advertising) require more regular planning in advance. Also, public relations and media relations need time. Building long-term relationships with journalists takes many months. On the Internet it is possible to have an effect immediately and any information sent over the network (a new post on a blog, newsletter, a new post on social media) goes to the audience right away. What's more, attractive messages spread through the network itself, thanks to the possibilities of copying, sharing and forwarding content.²²

d) Constantly expanding audience

We are seeing a gradual decrease in the number of traditional media consumers, for example TV or the press. Meanwhile, the number of Internet users is constantly increasing.

e) Build trust

In traditional communication cases the range of recommendations of satisfied or dissatisfied customers was limited. Currently, the number of reached consumers expressing their opinions is much bigger, and as a result of this, any recommendation or negative

²⁰ *Ibidem*, p.77.

²¹ S. Trzeciak, *op. cit.*, p.25.

²² This is so called viral marketing.

message can have a huge impact on the perception of the brand, and of creating its image. The Internet and especially social media allow consumers to organize themselves into strong pressure groups, which can promote the brand but also destroy them. That is why it is so important in e-branding to ensure the creation of a community around the brand, building trust, caring for loyal customers and having brand ambassadors, who in the event of a crisis may spontaneously help to provide brand support.

6. E-BRANDING DISTRIBUTION CHANNELS

1. Social media

Channels on social media are now widely used in communication. Their advantage is the possibility of interaction between users and the brand, but also the creation of relationships between supporters of the brand. DEI Worldwide Research and OTX have shown that 70% of consumers use social media to search for information about companies and their offers. 20% of them make purchase decisions on such information. According to research conducted by Synapse, customers who become friends or fans of a brand on Facebook are more loyal, and spend more on shopping than other customers.²³ Tracking your favourite brands on social media is becoming increasingly popular. Four out of ten representatives of generation Y using social networking add to their favourites a brand's page; among generation X the figure is 31%, and of representatives of the post-war baby-boom generation - 27%. Users want to be up to date, to know what is currently happening with a given brand. Representatives of generation Y instead of an ad expect the brands to create exciting services and offer access to sponsored content.²⁴

2. Content marketing

The growing importance in branding gains of content marketing. The creation and distribution of high-quality information is one of the most effective marketing strategies in creating a brand image. Presenting professional and free content favours perception of the brand as being reliable and professional.

3. Websites

The website is the most important flagship of a brand. Its high visibility and easy availability increases reliability and customers' willingness to purchase services or products.²⁵ In mechanisms for research positioning, websites are placed higher than social media as results on Google; this is why having a website is so crucial for a brand. Additionally, positioning mechanisms promote pages that contain words related to a search (for example, when searching for the word "coaching" not only results containing the single word coaching, but extensive substantive content are placed higher), as well as being user-friendly services, that are clear, transparent and have a mobile version.²⁶

²³ *Online branding - the need for new strategies*, source: <http://www.migomedia.pl/online-branding-potrzebanych-strategii> (access: 14.10. 2015.).

²⁴ J. Van den Bergh, M. Behrer, *how to create brands that love generation Y?*, Samo Sedno Edgard, Warsaw 2012, p. 38.

²⁵ *Online branding - the need for new strategies*, source: <http://www.migomedia.pl/online-branding-potrzebanych-strategii> (access: 14.10. 2015.).

²⁶ B. Mazurkiewicz *role of opinion leaders in informal communication*, "Marketing and Market" No. 11/2014, p. 38.

4. Buzz marketing

The terms "buzz marketing", "viral marketing", "word-of-mouth marketing", "evangelist marketing" and many others are sometimes used interchangeably. Currently, a significant part of recommendation communication takes place over networks, which is why brands so observantly follow opinions as they appear on social media. Research shows that 43% of teenagers aged 15-24 recommend their friends to try a brand. Buzz marketing in generation Y has a huge impact on consumer decisions - up to 60% of people manage to convince another to try a product for the first time.²⁷

7. BRANDING AND E-BRANDING IN THE CONTEXT OF CHOICES MADE BY THE GENERATIONS

1. The silent generation

Variouly called the silent generation, depression generation, the swing generation or traditionalists. People born in the years 1928-1945, the children of World War II and the period of the Great Depression, the nickname "silent" refers to the conformist attitude, showing a big difference between them and the loud expression of their beliefs of the next generations.²⁸ They value savings and ethics in business, and an important value for them is social security and family ties. They rely on proven, trusted products and services. Their preferred communication channels are radio, television, billboards, magazines, traditional mail and meetings with experts.²⁹

2. The post-war baby boom generation

This describes people born in the years 1946 to 1964, just after the end of World War II. Other names of this generation are the love generation, Woodstock generation, baby boomers and the sandwich generation. They grew up in a period of economic growth, so did not have to be afraid of unemployment. They enjoyed greater freedom, leisure, and thus they are more flexible and easier adapt.³⁰ They are characterized by a need for self-sufficiency. The representatives of this generation were the creators of the first personal computers and mobile devices. They appreciate individuality, freedom and live according to their own rules. Their goal in life is prosperity, good health and happiness. They have less trust in authorities. Television is still the main and preferred medium of communication but they also benefit from the internet, though use it mainly for the development of society; to a small extent they use it as a tool to support decision-making processes when it comes to and selecting a brand³¹ and purchasing.

²⁷ J. van den Bergh, M. Behrer, *op. cit.*, p. 53.

²⁸ *Ibidem*, p. 22.

²⁹ K. C. Williams, R. A. Page, *Marketing to the Generations*, "Journal of Behavioral Studies in Business", April 2011, p. 3, source <http://www.aabri.com/manuscripts/10575.pdf> (access: 14.10.2015).

³⁰ M. McCrindle, D. Hooper, *Generation Y. Attracting, engaging and leading a new generation at work*, source: http://avpma.ava.com.au/sites/default/files/AVPMA_website/resources/5.2%20Generation%20Y%20-%20Attracting,%20Engaging%20%26%20Leading%20a%20New%20Generation%20at%20Work.pdf (access: 14.10.2015).

³¹ K. C. Williams, R. A. Page, *op. cit.*, p. 6.

3. Generation X

Generation X consists of people born in the years 1965 to 1979; they are also called: baby busters, a lost generation, the invisible generation, the "why me" generation. They began their careers in the early 90s of the twentieth century, during the recession, mass layoffs and economic transformation. They are characterized by great individualism and a general pessimism. They are interested in making money using the rule of "buy cheap, sell expensive." Inclined to believe to a much greater extent than any other generation in the truth of advertising, they perceive TV commercials as attractive.³² Television is their preferred communication channel, but they also use the Internet to educate themselves and obtain information about products.

4. Generation Y

This consists of people born between 1980 to 1996, the first generation growing up in the era of the new millennium. Otherwise called the Millennium generation, the Why Generation, Net generation, or the generation of networks. They have a lot of knowledge about marketing, as advertising and media have accompanied them since birth, and because of this they are relatively resistant to advertising messages. New technologies are of great importance to them.³³ Representatives of the generation Y have: environmental awareness, a distrust of the media, make intensive use of electronic media, have awareness of global trends and use the Internet in making a purchasing decision.³⁴ Generation Y, on the basis of research conducted mainly in the United States is now considered the largest market segment in the world, and its spending power is constantly rising. At the same time the results of the research show that Generation Y does not tolerate bad experiences with brands; all negative situations can immediately lead to great loss of trust and loyalty. For Generation Y brand authenticity is very important, and its integrity and honesty - only these provide the potential opportunity of long-term consumer loyalty to the brand.³⁵ At the same time the results of the research show that Generation Y does not tolerate bad experiences with brands, all negative situations can immediately lead to a loss of trust and loyalty. For Generation Y very important is brand authenticity and its integrity and honesty - only they provide a potential opportunity for long-term consumer loyalty to the brand.³⁶ They use the television selectively, focusing exclusively on programs dedicated for them. A new, emerging distribution channel for this generation is product placement in computer games.³⁷

³² J. van den Bergh, M. Behrer, *op. cit.*, p. 22.

³³ *Ibidem*, s. 22.

³⁴ P. Paul, *Getting inside Gen Y*, "American Demographics", no. 23(9), p. 42-49.

³⁵ E. Gołąb-Andrzejak Loyalty in the information society on the example of "Millennials", "Marketing and Market" no. 11/2014, p.13.

³⁶ J. A. Parris, *Is your self-service Millennial friendly?*, "Speech Technology", January/February 2010, source: <http://www.speechtechmag.com/Articles/Column/Inside-Outsourcing/Is-Your-Self-Service-Millennial-Friendly-60407.aspx> (access: 14.10.2015)

³⁷ K. C. Williams, R. A. Page, *op. cit.*, p. 9.

5. Generation Z

This generation includes all born after 1996, also called the iGeneration, not only due to their attachment to iPods, iPhones and iPads but also because of their great need for individualization. Personalization of communication is the basis of thinking of this generation.³⁸

8. TRADITIONAL BRANDING, E-BRANDING vs. BRAND AWARENESS

American research shows that online advertising increases spontaneous brand awareness by 4%, while research in Germany for MSN, conducted by The European Interactive Advertising Association, has revealed that companies that advertise on the Internet increase their range by an additional 16%.³⁹ In contrast, the results of "The Branding Value of A Search's Page One" from 2012 reveal that the most significant increase in building brand awareness, as much as 30%, occurs when a brand appears simultaneously in the organic results in a search engine and the results shown on the first screen without scrolling.⁴⁰

1. McDonald's

As an example of the effectiveness of e-branding being more effective compared to traditional branding, we can look at the sandwich advertising campaign conducted by McDonald's in the UK. A transfer of 20% of the budget from off-line advertising to online advertising resulted in a 13% increase in product awareness. If this 20% had been spent on traditional media, the increasing awareness of the product would be only 2%.⁴¹

2. Pepsi

Pepsi followed a similar path. In 2010 they abandoned traditional advertising during the final Superbowl match, and funds to an amount of \$ 20 million were spent on a big public campaign, the Pepsi Refresh Project. They created a web platform for the promotion of local projects which required funding. Each platform user could create an account on the site and upload a video of their own project, collecting votes from other users. The winning projects received funding to the amount of 5000-25,000 dollars. Because users gave their votes to the projects they found most interesting, Pepsi could better understand the needs and preferences of their audience. The activities of the Pepsi Refresh Project involved well-known the American actress, star of the TV series "Desperate Housewives", Eva Longoria, supporting the project for the non-profit organization Address Contra El Cancer.⁴² The project Pepsi perfectly tied in with the expectations of generation Y, and was a good alternative to traditional advertising, of which this generation is wary and it engaged users, meeting the criteria of interactivity.

³⁸ J. van den Bergh, M. Behrer M., *op. cit.*, p. 24.

³⁹ *Online branding – need of new strategies*, source: <http://www.migomedia.pl/online-branding-potrzeb-nowych-strategii> (access: 14.10. 2015r.).

⁴⁰ *Ibidem*.

⁴¹ *Ibidem*.

⁴² J. van den Bergh, M. Behrer M., *op. cit.*, p. 45-46.

3. True Blood

The premiere of the third season of the TV series "True Blood", produced by HBO, as opposed to the previous series, was promoted on the network. The campaign was addressed to network users Flixster film, and on Variety on mobile devices. Touching the screen while browsing caused an imprint of a bloody mark on the screen, and subsequent blood dripping down the screen. Then appeared a banner encouraging the viewer to see the trailer for the new season of the show. The viewership of the third season of "True Blood" increased by 38% compared to the previous season.⁴³ This may be related to the fact that the advertising met the criteria of innovation, as well as, by using the mobile channel, it went to the representatives of the Y generation, which uses much less television.

4. Nike

In 2004 sportswear manufacturer Nike developed an application for runners, Nike +, which after downloading it on your smartphone enabled the consumer to store information about each training session, and publish it on the site nikeplus.com. The technology was in sync with iPods and iPhones. The site nikeplus.com users could benefit from specific training programs, compare achievements and compete with other users. Through Nike +, Nike increased the company's turnover - with their 48% market share of the athletic footwear rising to 61% within two years. Thanks to this service many users convinced themselves of the brand and its products.⁴⁴ The success of the image campaign was associated first with the fact connection to a different brand, by many considered to be a cult, that is Apple. Secondly, not without significance was the fact that it provided users with a free application, and the possibility of sharing results which has helped build a community around the brand.

9. VISIBLE TRENDS AND FORECASTS FOR THE FUTURE

These examples give reason to believe that the trend away from traditional branding for e-branding will continue. Comments by generations Y and Z show they are not able to be attracted by the traditional image campaigns on television, newspapers or radio. It is related in particular to the fact that the generation Y and Z are focused on new technologies; what is more generation Z does not know the time without using the Internet, and the network is their basic medium from which they get information about the world. It is generations Y and Z that are now the largest consumer market brands. It seems that in the framework of e-branding the trend towards mobile advertising will strengthen, addressed to users of smartphones and tablets. With each passing year the lifetime of these devices increases for consumers, so mobile advertising can reach them at all, at any time - while watching a show, traveling by public transport or shopping. E-branding also gives much greater opportunities to establish personal relationships with customers, which will be of great importance when the generation Z, depending on a fully personalized messages, will dominate the market.

⁴³ J. Kall, *op. cit.*, p. 129.

⁴⁴ *Ibidem*, p. 35.

10. SUMMARY

Network media and social media have become the primary sources of knowledge about brands and products for many consumers. They also play a key role in the discovery of new brands through recommendations from friends and unidentified network users. Nowadays, the creation of a brand campaign is not enough. The real driving force of a brand today are loyal consumers, people who are well aware of a brand and are eager to use its products or services. Opinions and recommendations of friends can have a far greater impact on consumers' decisions than advertising. A good reputation has always been important for the image of a brand, but now the owners of the brands have little effect on the nature of comments on their products and services in the network, so hence the thinking that the image is so important. A strong brand has a bond with the consumer and makes an interesting offer. Marketing activities of brands should arouse interest and stimulate positive opinions about the brand, especially on the networks.

LITERATURE

- [1] Gołąb-Andrzejak Edyta. 2014. „Loyalty in the information society on the example of "Millennials", *Marketing i Rynek* 11: 11-21.
- [2] Kall Jacek. 2015. „Branding on smartphone. Brand mobile communication”. Warsaw: Wolters Kluwer SA.
- [3] Kiefaber David. 2013. “IBM's Outdoor Ads Actually Try to Be Useful and Make Cities Better”. source: <http://www.adweek.com/adfreak/ibms-outdoor-ads-actually-try-be-useful-and-make-cities-better-150091> (access: 14.10.2015).
- [4] „CBOS Communication Research No. 82/2014: Internet users”. Source: http://www.cbos.pl/SPISKOM.POL/2014/K_082_14.PDF (access: 14.10.2015).
- [5] Królewski Jarosław, Sala Paweł (red.).2014. „E-marketing. Contemporary trends. Starter pack”. Warsaw: PWN.
- [6] Mazurkiewicz Bartosz. 2014. „The role of leaders' opinion in informal communication.”
- [7] McCrindle Mark, Hooper Danica. 2007. “Generation Y. Attracting, engaging and leading a new generation at work”. Source: http://avpma.ava.com.au/sites/default/files/AVPMA_website/resources/5.2%20Generation%20Y%20%20Attracting,%20Engaging%20%26%20Leading%20a%20New%20Generation%20at%20Work.pdf (access: 14.10.2015).
- [8] Parris Jo Ann. 2010. “Is your self-service Millennial friendly?”. *Speech Technology*. Source: <http://www.speechtechmag.com/Articles/Column/Inside-Outsourcing/Is-Your-Self-Service-Millennial-Friendly-60407.aspx> (access: 14.10.2015).
- [9] Paul Pamela. 2001. “Getting inside Gen Y”. *American Demographics* 23(9): 42-49.
- [10] Połowianiuk Marcin. 2015. „Television has no future”. source: <http://www.spidersweb.pl/2015/07/telewizja-nie-ma-przyszlosci.html>(access: 14.10.2015).
- [11] „IGRZ report on the results of OOH advertising in Poland in 2014 Report”. source: <http://igrz.home.pl/Raporty/2014%20RAPORT%20ROCZNY%20IGRZ.pdf>(access: 14.10.2015).
- [12] Thomas Greg Metz. 2004. “Building the buzz in the hive mind”. *Journal of Consumer Behaviour* 4: 64-72.
- [13] Trzeciak Sergiusz. 2015. „Public image on the web. Who are you online?”. Gliwice: Helion.
- [14] „Online branding – the need of new strategies”. source: <http://www.migomedia.pl/online-branding-potrzeba-nowych-strategii> (access: 14.10. 2015r.).
- [15] Van den Bergh Joeri, Behrer Mattias. 2012. „How to create brands that generation Y will love?”. Warsaw: Samo Sedno Edgard.
- [16] Williams Kaylene C., Page Robert A. 2011. “Marketing to the Generations”, *Journal of Behavioral Studies in Business*. source: <http://www.aabri.com/manuscripts/10575.pdf> (access 14.10.2015).

E-BRANDING A BRANDING TRADYCYJNY

Telewizja, radio oraz prasa przez wiele lat niepodzielnie panowały na marketingowym rynku i pozwalały efektywnie docierać do szerokiego grona odbiorców. Jednakże obecnie obserwujemy spadek skuteczności tradycyjnych form komunikacji marki (poprzez komunikaty w telewizji, na łamach prasy, w rozgłośniach radiowych czy z wykorzystaniem reklam outdoorowych). Młodszy odbiorca – przedstawiciel pokolenia Y i Z – oczekują od komunikatów czegoś zupełnie innego niż ich rodzice czy dziadkowie. Wymagają, aby przekaz był możliwie jak najbardziej interaktywny i zindywidualizowany oraz mają znacznie mniejsze zaufanie do tradycyjnych form reklamy. Wszystko to sprawia, że znaczenie e-brandingu stale rośnie. Celem niniejszego artykułu jest próba opisanie tradycyjnego sposobu kreowania i zarządzania marką oraz porównania go z e-brandingiem, uwzględniając cechy obu jego form, najczęstsze kanały dystrybucji, a także sposoby formułowania komunikatów. Tradycyjny branding oraz e-branding omówione zostają w kontekście wyborów zakupowych dokonywanych przez przedstawicieli poszczególnych generacji. Artykuł wskazuje ponadto na istotne różnice w obu przedstawionych formach kreowania marki, a także – w oparciu o najnowsze przykłady kampanii wizerunkowych i reklamowych znanych marek – dowodzi większej skuteczności e-brandingu we współczesnym świecie. Dzieje się tak dlatego, że e-branding daje o wiele większe możliwości nawiązywania osobistych relacji z klientami, co już ma duże znaczenie, a stanie się jeszcze istotniejsze, gdy pokolenie Z, oczekujące pełnej personalizacji komunikatów, zacznie dominować na rynku.

Słowa kluczowe: branding, e-branding, branding tradycyjny, świadomość marki, kreowanie marki.

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CULTURAL CONDITIONS FOR INDIVIDUAL AND CORPORATE ENTREPRENEURSHIP DEVELOPMENT

The article focuses on characterizing the two kinds of entrepreneurship – individual and corporate. Their development is the result of a combination of various factors, dependent – both – on the internal (subjective) predispositions of particular individuals who themselves conduct business activities (individual entrepreneurship) and the persons realizing entrepreneurial ventures (corporate entrepreneurship), as well as on the external conditions determining the rate of entrepreneurship development and influencing the effectiveness of this kind of activities. In the study, the subject of the in-depth analysis is the issue of cultural conditions for individual and corporate entrepreneurship development. The authors of the paper draw the attention to the fact that the analysis of entrepreneurship (both – theoretical and empirical) cannot disregard its connection to culture, which creates solid foundations for any human activity, including entrepreneurial activity. Entrepreneurship is a social process which is strongly determined by culture. It depends on patterns and the values that are shaped historically on the level of a family as well as local communities. J. Schumpeter indicated that entrepreneurship development requires a favorable social climate. Presently, cultural conditions are considered to have the fundamental role in the development of all types of entrepreneurship. It is emphasized that entrepreneurship is deeply rooted in and completely shaped by culture. Hence, the analysis of entrepreneurship (also individual and corporate ones) cannot disregard its relations to culture.

Keywords: entrepreneurship, individual entrepreneurship, corporate entrepreneurship, organisational culture

1. INTRODUCTION

Entrepreneurship is a multidimensional phenomenon, which can be analysed at the level of individuals, groups, organisations as well as regions, countries and economies. In each case, the analysis of entrepreneurship cannot (should not) fail to take into consideration its connection to culture. Hence, as a social phenomenon, it requires the research that exceeds economic, formal, legal, technical, etc. conditions. It should take into account cultural context and the relations in working groups, since in each case, entrepreneurship, independently from its type, “occurs” in a specified cultural context. Culture constitutes a

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basis for its creation and development; it is a driving force for human entrepreneurship. Although it is a very significant aspect, it is not easy to analyse. That has been emphasised, inter alia, by Ł. Sułkowski, who claims that ‘organisational culture is a term that constitutes foundations, but simultaneously, a curse for humanities and social sciences’⁵.

The subject of the paper is the issue related to the significance of organisational culture for the development of individual and corporate entrepreneurship. There have been discussed the nature, functions and the significance of organisational culture. There has been also emphasised its role in the process of entrepreneurship⁶.

2. THE NATURE AND THE SIGNIFICANCE OF ORGANISATIONAL CULTURE

Organisational culture⁷ is a notion that has many various definitions⁸. According to the narrowest conceptualisation, it is ‘certain behaviour, standards and values of a particular individual [...], usual way of thinking, feeling and acting – shared, adopted and assimilated by employees’⁹. The selected definitions depicting the nature of organisational culture are presented in Table 1.

Table 1. The definitions of organizational culture

Author	Organisational culture is:
Ł. Sułkowski	a learned product of group experience, which bases on values, standards and cultural patterns that ensue from them
E. H. Schein	a pattern of shared basis assumption that was learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems
M. Kostera	a set of prevailing values and standards of behaviour characteristic

⁵ Ł. Sułkowski, *Ewolucjonizm w zarządzaniu. Menedżerowie Darwina*, PWE, Warszawa 2010, p. 71.

⁶ The present article has been prepared in connection with the realisation of the project *Recruitment for Effective European Cultural Workforce Diversity – REDIVE*, realised by Danmar Computers within the scope of the project Erasmus Multilateral, under the direction of The University School of Management and Industrial Studies in Porto, in partnership with Rotterdam School of Management and IESE Business School. The project in question is aimed at analysing intercultural differences in the management process, particularly, at the stage of recruitment, and indicating significant aspects of increasing the effectiveness and satisfaction from working in diversified cultural environment.

⁷ The term “organisational culture” itself was probably used for the first time by E. Jacques, who was conducting research in the factory Glacier in 1940s. The cultural perspective at the macro-social level served him as a variable that enabled the explanation of the economic and social problems of colonial countries. However, its permanent place in management sciences organisational culture gained in 1980s – 1990s. This movement developed owing to the influence of the international comparisons of working processes in the USA and Japan – source: Ł. Sułkowski, *Kulturowa zmienność organizacji*, PWE, Warszawa 2002, p. 53 and the following.

⁸ It is not an easy task to define organisational culture. E. H. Schein comments on this problem in the following way: ‘generally, everybody agrees that “it” (which is called organisational culture) exists and that it is important in its effects, but when we try to define it, we have completely different ideas of what “it” is’. E. H. Schein emphasises that the problems with defining organisational culture can ensue from various categories that are used to explain its nature, e.g.: 1) group norms; 2) espoused values, formal philosophy; 3) rules of the game; 4) climate; 5) embedded skills; 6) habit of thinking, mental models and linguistic paradigms; 7) shared meanings; 8) formal rituals and celebrations – source: E. H. Schein, *Organizational Culture and Leadership*, John Wiley & Sons Publisher, San Francisco 2004, pp. 12, 13.

⁹ M. Czerska, *Kulturowe uwarunkowania przedsiębiorczości w badanych przedsiębiorstwach*, [in:] „Przedsiębiorczość – natura i atrybuty”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2012, p. 219.

	of a particular organisation, underpinned with the assumption on the nature of reality and which is manifested in artefacts (external, artificial culture creations)
K. Bolesta - Kukułka	unwritten code of values, patterns of organisational behaviour, symbols, attitudes and orientations of organisation' participants, which is deeply embedded in organisational culture and passed on from generation to generation
J. Kisielnicki	a set of the elements that are crucial for the functioning of an organisation, e.g., artefacts, values, norms, policy of an organisation, which are formed by: employees, traditions and the environment
G. Hofstede	a specific "intellectual refinement", which is manifested in education, art and literature

Source: Ł. Sułkowski, *Kulturowa zmienność organizacji*, op. cit., p. 58; J. Kisielnicki, *Zarządzanie. Jak zarządzać i być zarządzanym*, PWE, Warszawa 2008, p. 34 and the following; E. H. Schein, *Organizational Culture and Leadership*, op. cit., p. 17; G. Hofstede *Kultury i organizacje*, PWE, Warszawa 2000, p. 39; <http://geert-hofstede.com/poland.html> [retrieved: July 8, 2015].

En enormous contribution to the development of the theory of organisational culture was made by a Dutch scholar G. Hofstede, who in 1970s and 1980s conducted complex research in several dozen countries in the world, aiming to determine the influence of culture on the values held in a workplace. Owing to them, he indicated considerable differences between people according to the nationality (which is strictly bounded with culture) they represent. On this basis, he defined the key dimensions of the differences between cultures, taking into consideration the following aspects¹⁰:

- **power distance index (PDI)** – determines the way in which inequalities between people are treated in a society;
- **individualism and collectivism (IDV)** – is measures the relations of an individual with other people and setting personal freedom against the need of social ties,
- **masculinity and femininity (MAS)** – concerns the division of social roles by sex. In the masculine society, there is a considerable division of social roles by sex, and in the feminine society there is relatively little division,
- **uncertainty avoidance (UAI)** – determines the attitude of the society to the uncertainty concerning the future,
- **long and short term orientation (LTO)** – indicates the manner of viewing the time and the perspective on activity¹¹.

The above-mentioned classification is very useful while determining behaviour, preferences and desirable ways of communication with the representatives of a given culture

¹⁰ G. Hofstede *Kultury i organizacje...*, op. cit., p. 51; <http://geert-hofstede.com/poland.html> [retrieved: July 8, 2015].

¹¹ Originally, G. Hofstede distinguished 4 basic dimensions of organisational culture, namely: 1) power distance, 2) individualism and collectivism, 3) masculinity and femininity, 4) uncertainty avoidance. In 1991, M. Bond together with G. Hofstede diagnosed the fifth differentiating factor – "long and short term orientation". This dimension determined the way of perceiving time and the perspective of action in particular cultures. In 2010, basing on the research conducted by M. Minkov, there were proposed two additional dimensions: "pragmatism and normativism" (PRA) and "indulgence versus self-restraint" (IND). Whereas the former was a completely new category, the latter derived from the long and short term orientation. Thus, in the present research on cultures, G. Hofstede proposes the use of the six dimensions of the differences in organisational culture.

and can be of much help, e.g., in choosing a proper management style, in motivating and planning trainings for groups in accordance to their belonging to a given culture.

Organisational culture performs a range of functions. Undoubtedly, the most significant one is building the identity of a certain community that is conducive to the sense of its belonging, and, therefore, identification with the organisation. What is also important is that it reduces uncertainty and provides greater sense of security which translates into engagement, and therefore, into individual and organisational effectiveness. J. Kisielnicki formulated the functions of organisational culture drawing attention to its significance within an organisation and in reference to the environment. This division is presented in Table 2.

Table 2. Internal and external functions of organisational culture

Internal functions:	External functions:
<ul style="list-style-type: none"> • offers common language and conceptual apparatus, which enable communication improvement, • establishes the boundaries of activity of particular groups, determines zones of influence, • influences people's attitudes and behaviour, • informs what is allowed and what forbidden, • determines the way the style of power is realised, • determines the principles of punishing and rewarding, • increases the sense of security, • offers the ideology that enables employees to find motivation to activity. 	<ul style="list-style-type: none"> • understanding (e.g., by clients, suppliers, shareholders) of organisation's aims and strategy, • employees' integration and their focus on means and aims, • the adoption (by owners and employees) of uniform principles of the evaluation of goals achievement, the functioning of the entire organisation and its particular elements, • the creation of a climate that enables overcoming threats, and common activities aiming to change present strategy.

Source: Own study based on: J. Kisielnicki, *Zarządzanie. Jak zarządzać i być zarządzanym*, op. cit., p. 37 and the following.

Organisational culture translates into organisation's functioning – it influences the effectiveness since it¹²:

- enables quick, efficient and unambiguous communication between participants; makes them understand each other better,
- standardises human behaviour increasing foreseeability and replacing immediate control; hence, it enables (to some extent) the resignation from formalisation that stiffens organisations and counteracts entrepreneurship and innovativeness,
- owing to this kind of culture, the members of an organisation interpret and evaluate the surrounding reality and the changes that occur within its scope,
- cultural community causes that organisation's members share aspirations, aims, desires, hopes and fears, which eases tensions connected to crises, conflicts, and heightens the feeling of the success being achieved.

¹² A. K. Koźmiński, D. Jamielniak, *Zarządzanie od podstaw*, Oficyna Wolters Kluwer business, Warszawa 2011, p. 267.

Therefore, organisational culture is one of the most important factors that stimulate, or restrain (if the management underestimate its importance) organisations' functioning and development. It is also a complex tool for shaping entrepreneurial behaviour and attitudes; a source where emotional, cognitive and behavioural elements of entrepreneurial attitudes come from¹³. It contributes to the creation and the development of "entrepreneurial spirit", owing to which people are more creative and entrepreneurial.

3. THE ROLE OF ORGANISATIONAL CULTURE IN THE PROCESS OF INDIVIDUAL ENTREPRENEURSHIP DEVELOPMENT

Individual entrepreneurship consists in undertaking and running business activity (the establishment of one's own, independent enterprise) by a natural or legal person or other organisational unit that is not a legal person. It is probably historically the oldest depiction of entrepreneurship.

In the literature on the subject, the significance of individual entrepreneurship was for the first time emphasised by R. Cantillon, who identified an entrepreneur with a merchant who buys goods at stable price, but sells at unstable one. The risk that is related to this kind of activity (connected to lack of certainty of activity, inability to anticipate future state and situation in the market) makes – according to R. Cantillon – a merchant an entrepreneur, since they take the risk of this type of activity¹⁴.

Contemporary theories on entrepreneurship derive from J. Schumpeter's concept, which is considered the prime one. He perceived entrepreneurship and the entrepreneurs implementing innovations as the main accelerator of economic growth and development, and the process of the so-called creative destruction¹⁵, which constitutes a source of entrepreneurship, as a basis for every positive change that occurs in enterprises and the economy. According to him, this process bases on innovations that destroy the present (yet still working) ways of production, introducing new, improved ones (the process is called moral obsolescence of machines and equipment), simultaneously becoming a source of progress. For J. Schumpeter, innovations are an endogenic driving force for entrepreneurship.

What deserve particular attention in the process of individual entrepreneurship are an entrepreneur and the economic functions they perform. The above mentioned J. Schumpeter called them demiurges, divine economy creators, a source of all positive changes and development. R. F. Hebert and A. N. Link created a list of various functions of an entrepreneur that were available in the literature. These are¹⁶:

- taking risk connected to uncertainty,
- providing (gaining) financial capital,
- the implementation of innovations,

¹³ A. Pochtowski, *Rola systemu zarządzania kapitałem ludzkim w kształtowaniu przedsiębiorczości. Narzędzia zarządzania kapitałem ludzkim kreujące postawy przedsiębiorcze*, [in:] „Kapitał ludzki a kształtowanie przedsiębiorczości”, M. Juchnowicz, ed., Poltext, Warszawa 2004, p. 236 and the following.

¹⁴ H. Barreto, *The Entrepreneur in Microeconomic Theory: Disappearance and Explanation*, Routledge, London and New York 1989, p. 34; R. Cantillon, *Essai sur la nature du commerce en général*, The Royal Economic Society, Londyn 1959, pp. 54-55.

¹⁵ B. R. Barringer, A. C. Bluedorn, *The relationship between corporate entrepreneurship and strategic management*, „Strategic Management Journal” 1999, No 20, p. 442.

¹⁶ R. F. Hebert, A. N. Link, *The Entrepreneur. Mainstream Views and Radical Critiques*, Praeger Special Studies, Praeger Scientific, New York 1982, pp. 107-108.

- making profit,
- decision-making,
- leadership,
- leading, organising and coordinating activities,
- possessing resources that are used to run a business (owned by an enterprise),
- employing factors of production,
- entering into contracts, signing agreements,
- arbitrage of the goods that differ in prices in geographically distant markets performed to gain profit.

One of the more important conditions for individual entrepreneurship development is organisational culture. It determines people's behaviour, the process of interactions between co-workers (partners, employees) – it creates a kind of frameworks of entrepreneurial activity of an individual, a network of behaviour that establishes patterns and standards of conduct. But for organisational culture, no organisation or human activity – also entrepreneurial one – could exist and develop properly. It was already emphasised by J. Schumpeter, who postulated that the development of entrepreneurship, first of all, requires favourable social climate¹⁷. However, not until now so much importance has been attached to cultural factors, which are considered to have great – if not decisive – significance for the development of entrepreneurial behaviour. It has been emphasised that 'the sources of entrepreneurial cultures lie much deeper than only in the mechanisms of the market – also in culture, patterns and values of a society itself'¹⁸.

According to H. B. Hawkins, present research on entrepreneurship has been dominated by economists. Although their works do not present its comprehensive image, their scientific output cannot be questioned. As easily observed – claims H. B. Hawkins – many economists omit the issues that constitute the essence of entrepreneurship on purpose: the influence of such social factors as: moral conviction, standards and values that people in various cultures prize the most. It is these elements that determine the general frameworks in which individuals can develop their entrepreneurship and seek new possibilities¹⁹. Entrepreneurship could not exist and develop without culture as 'it is not "in culture" but 'it itself is the culture'²⁰. This theory is confirmed by D. Lavoie²¹, who claims that entrepreneurship consists in interpreting and influencing culture. Moreover, he postulates that entrepreneurship is deeply rooted in and completely shaped by the culture. Similarly, B. Berger states that 'a type of cultural approach towards entrepreneurship enables the analysis of "grassroots", spontaneously increasing processes of economic growth. They are driven by the effort of individuals and social groups aiming to realise various aspirations, among which profit and improvement of one's own position compete with different aims'²².

Every person's activity is formed by culture, which creates specific "social roots" of human activity. The dissociation from them – according to M. Bartnicki – is an "alarm

¹⁷ T. Piecuch, *Przedsiębiorczość. Podstawy teoretyczne*, C.H. Beck, Warszawa 2013, p. 109.

¹⁸ T. Gruszecki, *Przedsiębiorca w teorii przedsiębiorczości*, CEDOR, Warszawa 1994, p. 91.

¹⁹ B. Berger (ed.), *Kultura przedsiębiorczości*, „Rój”, Warszawa 1994, p. 9.

²⁰ A. Szarecki, *Przedsiębiorczość jako forma kultury*, „Problemy Zarządzania” 2008, nr 2, p. 189.

²¹ B. Berger (ed.), *Kultura przedsiębiorczości*, op. cit., pp. 17, 45.

²² *Ibidem*, p. 30.

bell” that cautions against an avalanche destroying hopes for entrepreneurial activity. The above mentioned author indicated the types of situations (activities, behaviour), within the broadly understood culture, which are not conducive to people’s entrepreneurship. These are²³:

- confidentiality of information,
- lack of trust,
- a threat of losing identity,
- bureaucracy that blocks the explanation of the aims of undertaken actions,
- stubborn support of the concepts that led to success in the past,
- broadening the scope of power to make something good in the future,
- separation of the values that are considered important,
- multiplication of the priorities and guidelines that narrow discretion.

Thus, to ensure development, entrepreneurial and innovative attitudes and behaviour are necessary, however, they have to be established in culture and they must have social consent and support. The thesis on cultural establishment of social activities leads to the conclusion that legal regulations, access to technology and funds for financing activities are not sufficient for individuals, organisations and societies to be entrepreneurial. What is indispensable is a proper cultural foundation, which enables people to creatively use the chances and opportunities. Cultural factors, even though they change, have more permanent character than legal and economic conditions²⁴. They are able to create a proper, positive climate around everybody who decides to become an entrepreneur. They perceive their activity as imitable, good practices that generate profits not only for entrepreneurs themselves but also for their closer and further environment.

4. THE ROLE OF ORGANISATIONAL CULTURE IN CREATING CORPORATE ENTREPRENEURSHIP

Entrepreneurship can refer to individuals, small and medium firms as well as to big, complex enterprises²⁵. Quick changes that occur in their environment and the necessity for managing in more and more difficult conditions caused that also in big companies (frequently huge, international, global corporations) entrepreneurial behaviour is necessary at various levels – employees and the management. It is the so-called corporate entrepreneurship (also described as: organisational, internal, interorganisational or intrapreneurship²⁶). This notion was introduced to the literature on the subject in 1980s by G. Pinchot III²⁷ owing to the publication *Intrapreneuring. Why you don't have to leave the Corpora-*

²³ M. Bratnicki, *Przedsiębiorczość i przedsiębiorcy współczesnych organizacji*, AE w Katowicach, Katowice 2002, p. 126.

²⁴ B. Glinka, *Kulturowe uwarunkowania przedsiębiorczości*, kklinc.blox.pl/resource/SeminariumReferatGlinka.doc, [retrieved: July 3, 2014].

²⁵ See more: T. Piecuch, *Ewolucja teorii przedsiębiorczości – od przedsiębiorczości indywidualnej do wewnętrznej*, [in:] „Uwarunkowania przedsiębiorczości – różnorodność i jedność”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2010, pp. 476–494.

²⁶ A. S. Saetre, *Intrapreneurship. An Exploratory Study of Select Norwegian Industries*, Norwegian Research Council, Trondheim 2001, p. 9,10.

²⁷ Already J. Schumpeter, who laid the foundation of the contemporary theory of entrepreneurship, claimed that the “spirit of entrepreneurship” is not necessarily identified with an individual – it can be felt in large enterprises or profit-oriented institutions. Also P. F. Drucker emphasised that contemporary companies, particularly large ones, will not survive in the period of quick changes and innovations if they do not acquire entrepreneur-

tion to become an entrepreneur²⁸. He assumed (on the basis of the observations of the functioning of big American enterprises) the possibility (or even, necessity) of entrepreneurial behaviour even in very big units with a complex structure. He comprehended intrapreneurship as ‘a process by means of which huge enterprises aim to support entrepreneurship among the managers and other employees’²⁹. Whereas, according to M. Bitzer³⁰, intrapreneurship is a concept of supporting innovative processes in a big organisation in every area of its activity.

Thus, corporate entrepreneurship consists in doing new things, exceeding traditional methods in seeking new possibilities of activity. It is also a process in which individuals within a large structure of an organisation have the possibility of active, entrepreneurial activity, regardless of the resources they possess in a given moment³¹. F. L. Frey emphasises that the following elements influence the formation of corporate entrepreneurship³²:

- full involvement of corporation’s management in the matters on propagating entrepreneurship,
- the appearance of intrapreneurship culture in the entire corporation and a determined model or type of activities characterised by entrepreneurship,
- a clearly determined, preferred profile of an intrapreneur,
- a defined system of rewards and incentives for an intrapreneur.

Ch. Stopford and J. Baden-Fuller distinguished three basic types of phenomena that create corporate entrepreneurship, namely³³:

- the creation of new economic units within existing corporations, which also comprises corporate venturing,
- transformation or renewal of already existing organisations, e.g., by means of process innovations, including new ways of solving old (familiar) problems,
- difficult to achieve, ground-breaking, exceptional innovations (called “frame-breaking” or “discontinuous changes”) that change the rules of competing in the industry.

The development of corporate entrepreneurship necessitates a concurrence of a number of conditions, however, in the present paper particular regard has been paid to the significance of entrepreneurial culture, in which “technocratic determinism is proposed to be replaced with a paradigm of subjective, active role of a person (entrepreneur, leader) engaged in the process of making choices on the basis of subjectively rational motivation

ial competence. Moreover, he claimed that it is not truth that large size constitutes a barrier for entrepreneurship and innovativeness. It is frequently heard in the discussions on entrepreneurship about bureaucracy in large organisations and their conservatism. Certainly, both of them exist and constitute a serious obstacle for entrepreneurship and innovativeness, however, it is the same degree as for other results. It is unambiguously indicated by the registers that amidst the existing enterprises, companies and institutions from public sector, the small ones are the least innovative and entrepreneurial. Whereas, there is a number of the existing entrepreneurial companies that are very large – source: P. F. Drucker, *Natchnienie i fart czyli innowacja i przedsiębiorczość*, „Studio Emka”, Warszawa 2004, pp. 168, 172.

²⁸ G. Pinchot III, *Intrapreneuring. Why you don't have to leave the Corporation to become an entrepreneur*, Harper & Row Publishers, New York 1985.

²⁹ C. Barrow, *The Essence of Small Business*, Wyd. „Prentice Hall”, New York 1993, pp. 15 and the following.

³⁰ M. Bitzer, *Intrapreneurship – Unternehmertum In der Unternehmung*, Schaffer, Stuttgart 1991, p. 17.

³¹ A. Turró, *Organizational resources and intrapreneurial activities: a cross-country study*, http://idem.uab.es/2Turró_JPC_2012.pdf [retrieved: July 15, 2013].

³² F. L. Frey, *Entrepreneurship: A Planning Approach*, West Publishing Company, 1993.

³³ A. S. Saetre, *Intrapreneurship. An Exploratory Study of Selekt Norwegian Industries*, op. cit., p. 9.

basing on values. What is particularly meant here is the creation of an organisation's environment that is conducive to creative thinking³⁴. In such an entrepreneurial enterprise, the prevailing innovative atmosphere 'is created through ensuring a pro-innovative working environment, which enables risk-taking, experimenting and challenging patterns'³⁵.

What plays a crucial role in corporate entrepreneurship are employees' entrepreneurial attitudes and behaviour. However, what is also necessary are certain solutions at organisational level that encourage workers to display initiative. All those aspects create the culture of intrapreneurship orientated towards innovativeness and proactivity not only at the level of employees but also organisation's management. According to Z. Jasiński, the following activities are conducive to entrepreneurial culture of an organisation³⁶:

- the support for every kind of novelty, improvement, innovativeness, creativity, imaginative people and the use of every opportunity to implement innovative solutions,
- open manifestation that the management at various levels are in favour of employees' creative initiatives and ideas, and simultaneously accept possible failures,
- tolerance of other, unconventional way of thinking and perceiving the world,
- tolerance of flexibility within the arranged schedules serving objectives' realisation; in certain situations lack of hurry in decision-making,
- effective communication, exchange and efficient flow of information between employees at various levels of management.

Intrapreneurial culture can be a counterbalance for excessive formalisation and bureaucracy; it supports employees' creative activity; it is orientated towards teamwork. In this type of culture 'the place of such rules as "stay inconspicuous", "do not take initiative", "do not make mistakes", etc. are substituted with new principles that enable the development of imagination, formulation of long-term goals and plans of activity, rewarding the actions, attempts and experiments being undertaken'³⁷. Entrepreneurial employees in an intrapreneurial culture do not wait passively for superiors' orders – they themselves think what they should do and how they can achieve that. They have ideas, improve the procedure of manufacturing, improve products and are willing to cooperate with management, co-create entrepreneurship, feel like partners who are co-responsible for enterprise's condition – regardless of the position in the hierarchy they occupy. They are not satisfied with imitative work that does not require engagement, personal contribution and creativity, but they want to take responsibility for what they do, they do not avoid it – quite the opposite. They want the freedom of choice of the method of activity and the ways of solving problems (preserving, certainly, reasonable, safe proportions between freedom and discipline at work). Innovative achievements and employees' new ideas should be valued highly and adequately rewarded. The management should encourage employees to devel-

³⁴ L. Kaliszczak, *Kształtowanie kultury przedsiębiorczości oraz próba jej empirycznej weryfikacji*, [in:] „Uwarunkowania przedsiębiorczości – różnorodność i jedność”, op. cit., p. 167.

³⁵ D. Lewicka, W. Hydzik, *Determinanty aktywności innowacyjnej: osobowość, kompetencje i styl rozwiązywania problemów, wyniki badań*, [in:] „Przedsiębiorczość – natura i atrybuty”, op. cit., p. 102.

³⁶ Z. Jasiński, *Tworzenie środowiska dla zachowań przedsiębiorczych*, [in:] „Kapitał ludzki a kształtowanie przedsiębiorczości”, op. cit., p. 75 and the following.

³⁷ *Ekonomika i zarządzanie małą firmą*, B. Piasecki, ed., PWE, Warszawa 1998, p. 31.

op their own skills, to be creative; they should apply the so-called ‘open style of implementing innovations, i.e. continuous and permanent positive attitude to innovations’³⁸.

What is also significant in creating corporate entrepreneurship is suitable (being a result of organisational culture) atmosphere in an organisation. In such an atmosphere, employees are capable of taking initiatives; “they would feel like being active”; when they feel good in an organisation they will not be afraid if an idea occurs to be unsuccessful. And vice versa – employees will not engage or display initiatives in organisations in which ‘there is a tendency to oppose everything that is new, which is usually expressed in generating false evaluations, rumours, emphasising and exaggerating the drawbacks and flaws of the proposed solutions, failing to mention their advantages, or even showing hostility towards people who suggest “new rules of the game”, which usually requires putting more effort and breaking present habits’³⁹.

Employees should feel that their creative effort will be noticed, appreciated and adequately rewarded by the management. Only then will they be willing to display initiative and work on the implementation of new innovative solutions. In such an enterprise, having the trust and support of the management and co-workers they will feel safe⁴⁰.

To talk about the atmosphere that is conducive to entrepreneurship in an organisation one should⁴¹:

- ensure good organisation of an institution (improvisation, activity or randomness always, in consequence, bode ill),
- make employees perceive themselves positively, feel an open chance and receive clear signals concerning their own success and good direction of personal development from the boss and the closest environment,
- give everybody real, not illusory chances of promotion, depending only on actual engagement and work results,
- invest in the development of employees’ professional and personal competence through a suitable configuration of trainings, courses or postgraduate studies,
- provide the members of an organisation with permanent, unconditional support in various aspects (legal, organisational, emotional, moral and financial).

In view of this, the enterprises (regardless of the size) that take risk, are entrepreneurial, innovative and active⁴², create the conditions that encourage their employees to display entrepreneurial attitudes and behaviour. The significance of organisational culture for this process is manifested in its responsibility for certain activities, attitudes and motives, the manner in which an organisation as a team of people works and the way in which individ-

³⁸ B. Kaczmarek, *Innowacje i kultura organizacyjna we współczesnym przedsiębiorstwie – zarys problemu*, [in:] „Uwarunkowania przedsiębiorczości – różnorodność i jedność”, op. cit., p. 22.

³⁹ Z. Jasiński, *Tworzenie środowiska dla zachowań przedsiębiorczych*, op. cit. p. 75.

⁴⁰ Lack of trust in co-workers is considered one of the most significant barriers that curb employees’ inclination towards entrepreneurship. It ensues from the following reasons: 1) a potential corporate entrepreneur feels lonely and knows that they will take responsibility for the entire realisation of a project (they cannot count on others); 2) an employee is afraid that if their ideas will be right, they can be adopted by co-workers; their author put the greatest amount of effort but the possible laurels can be reaped by someone else (e.g., superior) – source: B. Glinka, S. Gudkova, *Przedsiębiorczość*, Oficyna Wolters Kluwer business, Warszawa 2011, p. 230.

⁴¹ E. W. Radecki, *Zachowania organizacyjne. Pytania i odpowiedzi*, Wyższej Szkoły Integracji Europejskiej w Szczecinie, Szczecin 2010, p. 29.

⁴² B. R. Barringer, A. C. Bluedorn, *The relationship between corporate entrepreneurship and strategic management*, op. cit. p. 422.

uals function in a certain community. Furthermore, it contributes to the creation of a positive atmosphere that is conducive to entrepreneurship and innovativeness.

5. CONCLUSION

Presently, in more and more complicated conditions of external environment, there has been observed a great interest in the issues about the influence of organisational culture on human attitudes and behaviour. According to M. Czerska, it ensues from the fact that⁴³:

- the reserves of the growth of the effectiveness of people's functioning comprised in the so-called "hard" factors run out, therefore people started to seek additional sources in the area of the so-called "soft" factors, which encompass organisational culture;
- there was noticed and research-proved the influence of culture on the functioning of an organisation, its image, effectiveness, market position, etc.;
- people have started to perceive organisational culture as a kind of antidote for the problems that an organisation has to face and the challenges of the present time.

The paper aimed to indicate the significance of organisational culture in creating individual and corporate entrepreneurship. It has been emphasised that culture is a basis for every kind of activity, exists in every organisation and supports its activity. Understood as a set of prevailing values, human behaviour and the guidelines concerning the realisation of the fundamental objectives of a given organisational unit, it is also to a great extent responsible for the formation of entrepreneurial behaviour. It results from the fact that it has an effect on: communication, innovativeness, risk-taking, motivation to work, interpersonal relations – the elements that are crucial for the development of individual and also corporate entrepreneurship.

For the development of corporate entrepreneurship, organisational culture is even more significant since corporations, most frequently, are large, supranational enterprises employing the representatives of various cultures, possessing branches in various countries and doing business in various parts of the world. The awareness of the existence of cultural differences in various countries (which was emphasised by G. Hofstede) can considerably facilitate running a business and prevent many mistakes. It is not easy – it requires knowledge of intercultural management, however, it significantly facilitates the management of global corporations, which are growing in number under the conditions of globalisation.

LITERATURE

- [1] Barreto H., *The Entrepreneur in Microeconomic Theory: Disappearance and Explanation*, Routledge, London and New York 1989
- [2] Barringer B. R., Bluedorn A. C., *The relationship between corporate entrepreneurship and strategic management*, „Strategic Management Journal” 1999, No 20
- [3] Barrow C., *The Essence of Small Business*, Prentice Hall Ed., New York 1993
- [4] Berger B. (ed.), *Kultura przedsiębiorczości*, „Rój”, Warszawa 1994
- [5] Bitzer M., *Intrapreneurship – Unternehmertum In der Unternehmung*, Wyd. Schaffer, Stuttgart 1991
- [6] Bratnicki M., *Przedsiębiorczość i przedsiębiorcy współczesnych organizacji*, AE w Katowicach, Katowice 2002
- [7] Czerska M., *Wpływ kultury na zachowania organizacyjne*, [in:] „Przedsiębiorczość – natura i atrybuty”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2012

⁴³ M. Czerska, *Wpływ kultury na zachowania organizacyjne*, [in:] „Przedsiębiorczość – natura i atrybuty”, op. cit., p. 20.

- [8] Drucker P. F., *Natchnienie i fart czyli innowacja i przedsiębiorczość*, „Studio Emka”, Warszawa 2004
- [9] *Ekonomika i zarządzanie małą firmą*, pod red. B. Piaseckiego, PWE, Warszawa 1998
- [10] Frey F. L., *Entrepreneurship: A Planning Approach*, West Publishing Company, 1993
- [11] Hebert R. F., Link A. N., *The Enterepreneur. Mainstream Views and Radical Critiques*, Peaeger Special Studies, Praeger Scientific, New York 1982
- [12] Hofstede G., *Kultury i organizacje*, PWE, Warszawa 2000
- [13] <http://geert-hofstede.com/poland.html>
- [14] Glinka B., *Kulturowe uwarunkowania przedsiębiorczości*, kklinc.blox.pl/resource/ SeminariumReferatGlinka.doc
- [15] Glinka B., Gudkova S., *Przedsiębiorczość*, Oficyna Wolters Kluwer business, Warszawa 2011
- [16] Gruszecki T., *Przedsiębiorca w teorii przedsiębiorczości*, CEDOR, Warszawa 1994
- [17] Jasiński Z., *Tworzenie środowiska dla zachowań przedsiębiorczych*, [in:] „Kapitał ludzki a kształtowanie przedsiębiorczości”, M. Juchnowicz, ed., Poltext, Warszawa 2004
- [18] Kaczmarek B., *Innowacje i kultura organizacyjna we współczesnym przedsiębiorstwie – zarys problemu*, [in:] „Uwarunkowania przedsiębiorczości – różnorodność i jedność”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2010
- [19] Kaliszczak L., *Kształtowanie kultury przedsiębiorczości oraz próba jej empirycznej weryfikacji*, [in:] „Uwarunkowania przedsiębiorczości – różnorodność i jedność”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2010
- [20] Kisielnicki J., *Zarządzanie. Jak zarządzać i być zarządzanym*, PWE, Warszawa 2008
- [21] Koźmiński A. K., Jamielniak D., *Zarządzanie od podstaw*, Oficyna Wolters Kluwer business, Warszawa 2011
- [22] Lewicka D., Hydzik W., *Determinanty aktywności innowacyjnej: osobowość, kompetencje i styl rozwiązywania problemów, wyniki badań*, [in:] „Przedsiębiorczość – natura i atrybuty”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2012
- [23] Piecuch T., *Ewolucja teorii przedsiębiorczości – od przedsiębiorczości indywidualnej do wewnętrznej*, [in:] „Uwarunkowania przedsiębiorczości – różnorodność i jedność”, K. Jaremczuka, ed., PWSZ w Tarnobrzegu, Tarnobrzeg 2010
- [24] Piecuch T., *Przedsiębiorczość. Podstawy teoretyczne*, C.H. Beck, Warszawa 2013
- [25] Pinchot G. III, *Intrapreneuring. Why you don't have to leave the Corporation to become an entrepreneur*, Harper & Row Publishers, New York 1985
- [26] Poczrowski A., *Rola systemu zarządzania kapitałem ludzkim w kształtowaniu przedsiębiorczości. Narzędzia zarządzania kapitałem ludzkim kreujące postawy przedsiębiorcze*, [in:] „Kapitał ludzki a kształtowanie przedsiębiorczości”, M. Juchnowicz, ed., Poltext, Warszawa 2004
- [27] Radecki E. W., *Zachowania organizacyjne. Pytania i odpowiedzi*, Wyższa Szkoła Integracji Europejskiej w Szczecinie, Szczecin 2010
- [28] Rozkwitalska M., *Problemy zarządzania międzykulturowego w przedsiębiorstwach z kapitałem zagranicznym*, „Problemy Zarządzania” 2009, nr3
- [29] Saetre A. S., *Intrapreneurship. An Exploratory Study of Select Norwegian Industries*, Norwegian Research Concl, Trondheim 2001
- [30] Schein E. H., *Organizational Culture and Leadership*, John Wiley & Sons Publisher, San Francisco 2004
- [31] Sułkowski Ł., *Ewolucjonizm w zarządzaniu. Menedżerowie Darwina*, PWE, Warszawa 2010
- [32] Sułkowski Ł., *Kulturowa zmienność organizacji*, PWE, Warszawa 2002
- [33] Szarecki A., *Przedsiębiorczość jako forma kultury*, „Problemy Zarządzania” 2008, nr2
- [34] Turró A., *Organizational resources and intrapreneurial activities: a cross-country study*, http://idem.uab.es/2Turró_JPC_2012.pdf

KULTUROWE UWARUNKOWANIA ROZWOJU PRZEDSIĘBIORCZOŚCI INDYWIDUALNEJ I KORPORACYJNEJ

W artykule skoncentrowano się na charakterystyce dwóch rodzajów przedsiębiorczości – indywidualnej i korporacyjnej. Ich rozwój jest rezultatem splotu różnorodnych czynników, zależnych zarówno od wewnętrznych (podmiotowych) predyspozycji konkretnych osób podejmujących działalność gospodarczą na własny rachunek (przedsiębiorczość indywidualna) oraz realizujących przedsięwzięcia (przedsiębiorczość korporacyjna), jak również od warunków zewnętrznych wyznaczających tempo rozwoju przedsiębiorczości, wpływających na skuteczność tego typu działań. W opracowaniu szczegółowej analizie poddano kulturowe uwarunkowania rozwoju przedsiębiorczości indywidualnej i korporacyjnej. Autorki opracowania zwracają w nim uwagę na fakt, że analiza przedsiębiorczości (zarówno teoretyczna, jak i empiryczna) nie może pomijać jej związków z kulturą, która stwarza solidne fundamenty każdego rodzaju aktywności człowieka, działalności przedsiębiorczej również. Przedsiębiorczość jest procesem społecznym bardzo silnie zdeterminowanym kulturowo. Zależy od wzorów, wartości ukształtowanych historycznie, także na szczeblu rodziny i społeczeństw lokalnych. Już J. Schumpeter wskazywał na to, że rozwój przedsiębiorczości wymaga sprzyjającego klimatu społecznego. Współcześnie uwarunkowaniom kulturowym rozwoju każdego rodzaju przedsiębiorczości przypisuje się fundamentalną rolę. Podkreśla się, że przedsiębiorczość głęboko zakorzeniona jest w kulturze oraz całkowicie przez nią kształtowana. Uwarunkowania kulturowe odgrywają bardzo ważną rolę także dlatego, że przedsiębiorczość realizowana jest w określonych realiach społecznych, wynika z ukształtowanych społecznie wzorów zachowań, sposobów myślenia oraz poznawania świata, z samej natury człowieka - przedsiębiorcy. Analiza przedsiębiorczości (także indywidualnej i korporacyjnej) nie może zatem pomijać jej związków z kulturą.

Słowa kluczowe: przedsiębiorczość, przedsiębiorczość indywidualna, przedsiębiorczość korporacyjna, kultura organizacyjna

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THE IMPLICATIONS OF THE ECONOMIC CRISIS FOR POLISH CONSUMER BEHAVIOURS

The economic crisis, affecting with varying intensity a host of countries across the world, has not gone unnoticed among Polish consumers and households. The economic slowdown has triggered among consumers and households an array of remedies and adaptations to the changed crisis-time economic realities. Many of the Polish consumers and households, and especially those with lower income, found it imperative to cut down on consumer spending, scale down certain needs and revise their pre-crisis consumption patterns. In Poland the consequences of the recent economic crisis were not so dramatic as in other countries, however the country's economic slowdown had its impact on the standards of living and behaviours of Polish consumers and households, resulting, *inter alia*, in rationalisation of consumer behaviours and spending. It may be assumed that the latest economic crisis has prodded Polish consumers to reflect on the sense of the pre-crisis fever of credit-based consumption and materialistic approach to life. The basic objective of the paper is to provide an empirical insight and highlight major issues related to the impact of the crisis on Poles' consumer behaviours on the basis of the available research findings, and author's own questionnaire research conducted in 2009 and 2015. An in-depth analysis of the new tendencies in consumer behaviours and consumption patterns of contemporary Poles drawing upon statistical data and latest available research findings may provide useful tips and recommendations for economic policy makers and corporate strategists.

Keywords: economic crisis, consumer behaviour, Poland

1. INTRODUCTION

The latest global financial and economic crisis, which began in 2007–2008, was sparked off by a crisis on the subprime debt market and in a relatively short period it spilled over to other sectors, morphing into a worldwide recession. Poland was among the affected countries: even if its economic performance proved quite impressive compared to other markets with GDP decreases, the resulting slowdown meant that business had to operate in much deteriorated conditions, while many – especially lower-income – consumers and households faced the necessity of cutting down on consumer spending and revising their previous consumption patterns.

Prior to the crisis, Polish macroeconomic indicators were favourable, with GDP on the rise, unemployment continually going down, inflation at a stable level and consumption growing robustly. Due to the welcome socio-economic changes in the country, many investors perceived Poland as a dynamic economy with potential for growth. Polish consumers and households, able to meet many of their consumer needs and seeing growing affluence, declared increasing satisfaction with the quality of their life.

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The present article discusses the consequences of the latest economic crisis for Polish consumers and households. It begins with outlining the macroeconomic context of changes in Polish consumer behaviours, which is followed (section 3) with a description of households' problems in the light of research findings and statistical data. Section 4 presents conclusions of the author's empirical study to find out how Polish consumers reacted to crisis-induced economic problems. Selected findings of the author's research into Polish consumers' contribution to the "shadow economy", as a way of cushioning crisis-related hardship, are highlighted in Section 5, while the final part deals with the weightiest long-term consequences which the crisis has brought on Polish consumers and households. In the concluding part, the reader will find key takeaways from an empirical study by this writer and from literature on crisis-time behaviours by Polish consumers.

2. THE MACROECONOMIC CONTEXT OF CHANGES IN BEHAVIOURAL PATTERNS OF POLISH CONSUMERS

Over the past quarter-century, it was many times that Polish households had to adapt to their changing environment and learn how to function in a free market economy. The first stage of Polish transformation was a traumatic experience for many Polish consumers and families, reflecting a drastic decline in real incomes which affected their living standards and consumption. In step with the market economy's consolidation in Poland, affluence levels, living standards and consumption were gradually increasing. The resulting consumerist euphoria and a sense of consumeristic hedonism were then cooled down by the crisis, which came to Poland with a certain time lag. With a set of macroeconomic data which stood out among other countries, Poland has proved fairly resistant to the crisis, which in fact was confined to a delayed slowdown. Still, the country's GDP decelerated, unemployment went up and households saw their conditions deteriorating.

The change from the 7.2% real GDP growth rate recorded at the peak in 2007 was quite substantial: to +3.9% in 2008 and +2.6% in 2009² – even though the 2009 result meant that Poland was then the only expanding economy in the EU. The next two years witnessed some GDP acceleration (up 3.7% in 2010, and up 4.8% in 2011), followed by lower rates in 2012–2013 and a renewed upturn to 3.3% growth in 2014, as estimated by the Central Statistical Office (Eurostat's figure was up 3.4%). That came in part as a result of increased consumption³.

Thus, following a period of sustained growth, Poland's GDP in 2013 was 14.2% higher than in 2008 – the year in which most EU countries began to feel the pinch. The runner-up in this classification is Sweden, with 6.7% growth over the period, while the EU area as a whole reported a combined GDP decline by more than 1%⁴. In 2015–2016, Polish GDP growth is projected by various institutions – the Polish government, the European Commission, the International Monetary Fund – to run at an average rate of 3.2–3.5%.

The first symptoms of the economic slowdown began to filter through to the Polish consumers in 2009, when they still perceived the crisis more like media reports from a distant place than a hard reality. As demonstrated by findings of a CBOS research conducted in early March 2009 on a representative sample of 979 adult Poles, the households

² Roczne wskaźniki makroekonomiczne. 2015. Warszawa, Główny Urząd Statystyczny.

³ Analiza sytuacji gospodarczej Polski w 2014 r. 2015. Warszawa, Ministerstwo Gospodarki, March, p. 7.

⁴ Polska 2014. Raport o stanie gospodarki. 2014. Warszawa, Ministerstwo Gospodarki, p. 96.

already felt the consequences of the crisis. Some 44% respondents declared so – an increase of 26 percentage points on November 2008 – whereas 52% thought otherwise⁵. In 2001, too, respondents were expressing anxiety about future living standards and family finances. Such concern was declared by 74% of those happy with their financial status and as many as 91% of those unhappy. Respondents below 35 years of age, inhabitants of large cities (with above 100,000 population) and university/college graduates were slightly more likely to state that they were not afraid of a crisis threat. Asked about which hardships they associate with the crisis, respondents most frequently pointed to being forced to cut spending on food (48%), being affected by structural redundancies at the workplace (48%) and having one's pension payments delayed (43%). For one in five (22%) the crisis would mean having to cut down electricity consumption, and for 15% it would mean a loss of savings due to bank bankruptcy⁶.

Asked in a 2014 Eurobarometer survey about the most serious problems facing the country, respondents most frequently indicated unemployment (60%), the economic situation (22%), and rising prices/inflation (19%). When replying to questions about their personal perception, they pointed to rising prices/inflation (30%), unemployment (27%), the financial condition of their household (17%) and health and security (16%), while the country's overall economic situation (12%) and pensions (16%) stayed further down the list. Well, people indeed seem to be "looking for number one" – and Poles, accordingly, take greater interest in the condition of their household budgets than of the country's economy⁷.

3. PROBLEMS FACED BY POLISH HOUSEHOLDS IN MEETING THEIR NEEDS IN TIME OF CRISIS

Seeking to adjust to their changing environment, households tend to alter their consumer behaviours which are strongly determined by their financial status, and particularly the income level. Some Polish households actually have problems with satisfying their needs, including basic needs such as food.

One manifestation of adjustment to the new, worsened conditions is when more economical ways of meeting one's needs are embraced – whether in terms of shopping or household maintenance.

In a survey taken in April-May 2009 by the Centre for Consumer Behaviour Research at the Warsaw School of Economics, respondents admitted to cutting down on consumption, giving up some consumer purchases and switching to cheaper substitutes. They also opted to limit using paid-up services, and either switch to DIY or give up a service entirely. The biggest reductions were in spending on out-of-home entertainment (62.1% respondents), electronic gadgets (62.1%) and electricity, gas and water bills (61.4%)⁸. Problems with meeting their needs were also signalled by respondents in a comprehensive

⁵ Odczuwane i przewidywane konsekwencje kryzysu. 2009. Komunikat CBOS, BS/51/2009, Warszawa, March.

⁶ Czy Polacy boją się kryzysu. 2012. Komunikat CBOS, BS/2/2012, Warszawa, January.

⁷ Living conditions in the European Union. 2014. Eurobarometer Standard 81, report, Spring 2014 – TNS opinion & social, Brussels, European Commission, pp. 5-24.

⁸ Reakcje polskiego konsumenta na kryzys gospodarczy, ed. by Teresa Słaby. 2009. Warszawa, Szkoła Główna Handlowa, pp. 53-55.

national study of all major aspects of the life of Poles, known as “Societal Diagnosis”⁹. Contacted in early 2013, households described such problems as minor (36% respondents), regular (20%) and considerable (more than 17%).

The past four years saw an increase in the percentage of households who declared leading a very frugal life in order to save for basic necessities (up 5 percentage points, from 17.2% to 22.6%). At the other end of the spectrum, there were decreases in the respective percentages of households who declared following a frugal way of life and, as a result, keeping their heads above water (down by more than 2 percentage points, from 39.2% to 37.1%) and not saving but still having enough to meet all their needs (down by nearly 2 percentage points, from 10.1% to 8.2%). Problems appear not only with meeting needs related to food, but also non-food articles, including consumer durables. While durables’ penetration of households in Poland has been continually improving, there are still households not capable financially to buy such items. In early 2013, financial constraints were a factor behind not purchasing an apartment/house (as declared by 60% of the households not in possession of these items), an automatic washing machines (some 59%) and an LCD/plasma TV set (nearly 59%).

According to a CBOS research, the percentage of households encountering financial constraints in meeting their needs has dropped in recent years. In particular, households felt short of money for the purpose of rest and recreation (holidays, children’s summer/winter camps), purchase of home furnishings, culture and medical treatment. Lower percentages were reported in respect of financial constraints on clothing/footwear purchases, household bills, food purchases, education and personal hygiene (cf. Table 1).

Table 1. Households’ financial constraints on purchases of selected goods/services in 2010, 2011 and 2014*

Spending category/ Consumer goods or services not purchased due to shortage of funds:	Year		
	2010	2011	2014
	% of respondents		
Recreation (holidaying, children’s summer/winter camps)	41	45	41
Home furnishings	41	42	38
Culture (books, papers, theatre, concerts, etc.)	26	28	25
Medical treatment	25	27	21
Clothing and footwear	21	23	20
Household bills (utilities, rent, etc.)	18	19	18
Food	16	19	16
Education	12	12	11
Cleaning agents, personal hygiene	13	14	9

* Last 12 months preceding the study

Source: Jak nam się żyje? Materialny wymiar życia rodzin. 2014. Komunikat CBOS nr 44/2014, Warszawa, April, http://cbos.pl/SPISKOM.POL/2014/K_044_14.PDF (accessed: 16 January 2016).

⁹ Diagnoza Społeczna 2013. Warunki i jakość życia gospodarstw domowych. Polaków - Raport. [Special issue]. 2013. DOI: 10.5709/ce.1897-9254.99, available at: <http://www.ce.vizja.pl/en/issues/volume/7/issue/3.1>, accessed 20 January 2016.

Problems with current expenditure were felt primarily by the households describing their financial situation as bad (19% had not enough even for basic necessities, and 62% had to economise intensely on a daily basis). Among those who declared being in an average financial condition, 74% said they had enough for current spending but had to save for higher value purchases, while one in four (23%) had to save to allow even everyday shopping. As regards the respondents perceiving the financial situation of their households as good, half of them (51%) believe economising is not needed in respect of current spending but is required in order to enable higher value purchases. Two-fifths of the respondents (40%) declare living without saving¹⁰.

Crisis-time saving is not only a Polish phenomenon, and saving methods are similar in different countries. As demonstrated by a research carried out by the GfK institute, 39% of Poles declare cutting down on their food spending, and the same is declared by 38.6% of French people, 35.7% of Britons and 42.7% of Italians. Spending was down also in restaurants and pubs, where in 2011 Western European consumers left 13% less money than in 2007. Culture is another affected sector, with spending reduced by 41% of the French, 33.6% of Britons and 26% of the Dutch¹¹.

In a 2013 survey, the Polish polling institute CBOS enquired about purchases during the preceding 12 months of various items, including cars, furniture and home furnishings, computers and other electronic equipment. It turned out that the purchase of all these categories was declared by fewer respondents in April 2013, as compared to July 2012. The proportion of those declaring purchase of furniture and/or household appliances was down 6 percentage points; the corresponding change for purchase of computers was down 5 points and for other electronic equipment it was as steep as down 9 percentage points (to a 26% proportion overall, including 15% for TV sets and 24% for digital cameras). Asked about plans for the coming 12 months, one in ten declared the intention to purchase furniture and home appliances (11%), one in thirteen a car, the same proportion a piece of electronic equipment (e.g. a TV set, a digital camera), 8% an iPod, and 5% a computer¹².

4. REACTIONS OF THE POLISH CONSUMERS TO THE ECONOMIC PROBLEMS – FINDINGS OF EMPIRICAL RESEARCH BY THE AUTHOR

Seeking to establish how the crisis impacts Polish consumers and households, the Centre for Consumer Behaviour Research of the Warsaw School of Economics launched a two-stage project, conducted in 2009 and 2015 among respondents representing urban households in seven selected towns of Mazowieckie Voivodship (Ciechanów, Ostrołęka, Płock, Radom, Siedlce, Sochaczew, Żyrardów). Judgmental (purposive) sampling and questionnaire research were used in the project which involved the same sample size of 365 in both years, and which asked respondents an identical set of questions on how far their needs have been satisfied. To ensure the same sample structure in 2009 and 2015, the weighing procedures were followed which are often used in research based on quota sampling and purposive sampling. With research replication, a comparative perspective was

¹⁰ Ibidem.

¹¹ Wydatki Polaków: wprowadzamy w domu politykę oszczędności, http://forsal.pl/artykuly/689874,wydatki_polakow_wprowadzamy_w_domach_polityke_oszczednosci.html, accessed: 16 January 2016.

¹² Zmiany w postrzeganiu kryzysu i zachowaniach ekonomicznych Polaków. 2013. Komunikat CBOS, BS/152/2013, Warszawa, October.

sought to juxtapose the findings of 2009 and 2015, and identify behavioural changes among Polish consumers and households over six years¹³.

Ten attitudes towards the crisis were researched, broadly divided into three groups:

- protective (economising on “anything you can”; bringing down consumption to absolute necessity, buying in advance “while I still can afford”);
- problem-tackling (seeking help from family, friends/acquaintances or NOGs; migrating to work abroad, taking up work in the informal sector of the economy);
- alternative (taking jobs with lower skill requirements, accepting lower pay).

Table 2. Reactions of Mazowieckie Voivodship respondents to economic problems (%)*

Attitude	2009	2015
economising on “anything you can”;	40.9	59.0
bringing consumption down to necessity	30.8	64.0
buying in advance “while I still can afford”;	16.5	31.0
seeking help from family	11.3	49.0
taking up work in shadow economy	11.0	46.0
seeking help from acquaintances	9.9	43.0
seeking help from NGOs	9.1	44.0
migrating to work abroad	8.0	52.0
taking jobs with lower skill/education requirements	7.7	56.0
taking lower-paid jobs	6.0	43.0

* Respondents could indicate more than one reply.

Source: Author’s compilation based on findings of empirical research in 2009 and 2015.

In 2009, soon after early signs of the crisis emerged in the Polish economy – carrying, in particular, the threat of job losses – two protective attitudes proved dominant: economising on “anything you can”, (indicated by 40.9% respondents) and bringing consumption down to necessity (30.8%). These attitudes, and especially the latter, were found to be much more frequent in the 2015 survey, which may point to either harder economic problems, as compared with six years previously, or a greater propensity to save and control everyday spending. The second explanation seems more convincing, given that 2015 saw a much lower percentage of those fearing a job loss (47%) while at the same time the proportion increased of those respondents who declared bringing consumption down to necessity. Rationalisation of consumer behaviour thus proved to be a side-effect of the crisis. The 2015 numbers reveal lower spending on clothing/footwear by 73% respondents, on energy by 80% respondents, on out-of-home entertainment by 80%, on gadgets by 77%, on eating out by 75%, and on food by 67%¹⁴.

In 2009, 77.5% of the respondents actively responded to expected economic problems, and the proportion seen in 2015 was similar (76.0%). There was an unchanged percentage in both years (some 31%) of those seeking comfort in religious practice, and a small drop in the share of those expecting government help and assistance in improving the labour

¹³ Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu, ed. by Bogdan Mróz. 2015. Warszawa, Szkoła Główna Handlowa.

¹⁴ Anna Dąbrowska, Mirosława Janoś-Kresło, Bogdan Mróz, Teresa Słaby. 2015. Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu – II etap. Gospodarstwa miejskie – badania empiryczne, Warszawa, Szkoła Główna Handlowa, October.

market situation. Significantly, the percentage increased of those dispelling/ignoring fears of the future – from 6.3% in 2009 to 11% in 2015 – which may reflect a 2015 increase in social transfers and, possibly, a weakening of motivation to work and actively seek improvement in the economic situation of consumers and households¹⁵.

In both surveys, answers were sought to the question of how a worsening of consumers' and households' financial situation influenced their use of paid services – remembering about substitutive relationship between paid services and household members' own provision (some activities, such as house/apartment cleaning can be outsourced on a commercial basis).

The comparison of 2009 and 2015 findings of the empirical research confirms the conjecture that households' worsened financial situation leads to a reduction or abandonment of paid services. The intensity of this reduction/abandonment is diversified in accordance with respondents' socio-economic characteristics, but it is noteworthy that the relevant percentages increased perceptibly in 2015. The strongest impact of aggravated economic situation on service reduction/abandonment was seen in respect of services which meet less urgent needs, further down in hierarchy (e.g., tourism, culture) and services which can be replaced with work performed by household members themselves (e.g., renovation/construction, cooking). The biggest differences between replies given in 2009 and 2015 were seen in respect of caregiving, renovation/construction, insurance and food-serving – cf. Table 3¹⁶.

Table 3. Categories where a worsened financial situation has influenced or will influence limitation/abandonment of using a paid service

Service category	2009	2015
Tourism	56	79
Culture and culture –related	46	75
Food-serving	43	75
Repair/construction	45	82
Telecommunications	35	59
Banking	31	58
Insurance	26	60
Education	25	52
Caregiving	21	60
Medical	20	49

Source: Author's compilation based on findings of 2009 and 2015 surveys.

¹⁵ Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu, ed. by Bogdan Mróz, op. cit.

¹⁶ Anna Dąbrowska, Mirosława Janoś-Kresło M., Bogdan Mróz, Teresa Słaby. 2015. Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu – II etap. Gospodarstwa miejskie – badania empiryczne, op. cit.

5. PARTICIPATION IN SHADOW ECONOMY AS A WAY TO LIMIT CRISIS CONSEQUENCES FOR POLISH HOUSEHOLDS

In response to the economic crisis, a tough labour market situation and shrinking wage earning opportunities in the official sector, consumers and households resort to a variety of adaptation strategies. These may include the following:

- households forgo meeting some needs and bring down consumption, adjusting it to their lower income earning potential;
- consumers seek to keep at any price the pre-crisis living standards and consumption levels, looking for new income earning opportunities (including in the shadow economy). The ratchet effect, widely covered in literature on consumer behaviour, is at work here.

One behavioural variant of coping with the crisis, in conditions of official sector redundancies, is to delve into the shadow economy which then acts as a buffer against shocks in the official sector, producing income earning opportunities for many households. This option, as a means of cushioning the consequences of economic slowdown and preserving the living standards and consumption levels, was indicated by quite many respondents in the 2015 survey in seven Mazowieckie Voivodship towns (Ciechanów, Ostrołęka, Płock, Radom, Siedlce, Sochaczew, Żyrardów) (cf. Table 4).

Table 4. Seeking jobs in the informal sector as a means of coping with the crisis in 2009 and 2015

Total and in breakdown by age bracket, education and net income	% of respondent indications	
	2009	2015
Total	11	44
<u>Age group</u>		
- 25-34	13	38
- 35-44	10	46
- 45-54	15	43
- 55-64	7	50
<u>Education</u>		
- primary/vocational	12	40
- secondary	11	53
- higher	12	40
<u>Net income of household</u>		
- up to 2000 zł (€ 450)	15	54
- 2001-3000 zł (€451-680)	10	35
- 3001-4000 zł (€681-910)	14	41
- 4001-5000 zł (€911- 1135)	6	43
- above 5000 zł (€1135)	17	44
- reply refused	8	60

Source: Author's compilation based on findings of empirical research.

The survey demonstrates that taking jobs in the informal sector is seen by respondents as an important means of replenishing the family purse. In 2015, 44% respondents admitted to looking for shadow economy jobs in an effort to mitigate the consequences of the crisis (against just 11% in 2009). A comparison of 2009 and 2015 findings reveals an enormous increase in informal sector engagement in all breakdowns (by age, education,

income, etc.) – cf. Table 4. The percentages of items bought from the informal sector rose in all product/service categories over 2009–2015¹⁷. The most spectacular change was in alcoholic beverages, where this proportion increased nearly six times, followed by computer equipment/accessories (nearly threefold increase in the percentage in question) and cosmetics (percentage almost doubled). In services, the top table includes house/apartment cleaning and window washing (nearly threefold growth in the proportion of such services purchased from the shadow economy), private teaching (where the percentage more than doubled), and repair of home appliances and radio/TV equipment (more than doubling) – cf. Table 5.

Table 5. Goods and services purchased from the informal sector in Mazowieckie Voivodship towns under study in 2009 and 2015

Product/service	% of respondent indications	
	2009	2015
Food	40	71
Clothing	64	80
Footwear	53	72
Home appliances	41	46
Alcoholic beverages	6	34
Cigarettes	31	52
Cosmetics	34	66
Computer equipment/accessories	14	46
Computer software	20	36
CD	17	36
Repair/construction	49	49
Caregiving	14	34
House/apartment cleaning, window washing	11	32
Private teaching	17	39
Car repair	38	51
repair of home appliances and radio/TV equipment	22	54

* Replies do not add to 100 because respondents could indicate more than one product/service.

Source: Author's compilation based on findings of empirical research.

Such eye-catching increase in the proportion of respondents using informal-sector products and services brings up a question about its underlying causes. While a precise answer is hard to obtain, two factors seem to be coming to the fore. The respondents in the Mazowieckie Voivodship towns under review must have felt the pinch of the economic crisis, and their dire financial condition forced them to increasingly buy goods and ser-

¹⁷ Bogdan Mróz, Rola szarej strefy w zaspokajaniu potrzeb polskich konsumentów w warunkach kryzysu gospodarczego, in: *Reakcje polskiego konsumenta na kryzys gospodarczy*. 2009. ed. by Teresa Słaby, Warszawa, Szkoła Główna Handlowa; A. Dąbrowska, Mirosława Janoś-Kresło, Bogdan Mróz, Teresa Słaby. 2015. *Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu – II etap. Gospodarstwa miejskie – badania empiryczne*, op. cit.

vices from suppliers in the unofficial sector. But a poor financial condition alone does not explain the scale of this increase. A likely explanation is that in 2015 respondents were more open and prepared to admit buying from the shadow economy, not seeing anything wrong in that. It may be that consumer attitudes and mentality changed over the period towards being more permissive: being a customer of the informal sector is now perceived differently, no longer attracting sharp moral criticism and no longer carrying a stigma.

Table 6. Purchases of goods and services from the informal sector as reaction to economic crisis

(Faced with an economic crisis, do you or your household members buy goods and services without requesting a bill/invoice [i.e., in the shadow economy]?)

Total and in breakdown by gender, age bracket, education and town	% of respondent indications	
	2009	2015
Total	18	38
Age		
- women	14	34
- men	21	42
<u>Age</u>		
- 25-34	22	35
- 35-44	17	30
- 45-54	23	41
- 55-64	9	47
<u>Education</u>		
- primary/vocational	20	58
- secondary	14	42
- higher	20	30
<u>Town</u>		
- Ciechanów	15	54
- Ostrołęka	9	45
- Płock	16	25
- Radom	15	32
- Siedlce	33	36
- Sochaczew	17	20
- Żyrardów	17	56
<u>Net household income</u>		
- up to 2000 zł (€450)	21	65
- 2001-3000 zł (€451-680)	19	30
- 3001-4000 zł (€681-910)	21	29
- 4001-5000 zł (€911-1135)	24	36
- above 5000 zł (€1135)	16	28
- reply refused	10	56

Source: Author's compilation based on findings of empirical research.

In their efforts to brave the economic crisis, consumers and households – in addition to looking for additional employment outside the official sector – also seek to rationalise their consumer spending, and one way of achieving this is through buying some goods

and services from the shadow economy. Such acquisitions are often of inferior quality, coming with no backup servicing but their costs are perceptibly lower, thus pulling consumers and households into the embrace of the informal sector.

This was confirmed by findings of the author's own research, demonstrating that entrenchment-induced purchases from the informal economy were declared by a much higher proportion of the respondents in 2015 (38%) than in 2009 (18%). Buying on the unofficial market was more frequent among men (42%) than women (34%) and among elderly people (47% of the respondents in the 55-64 age bracket – cf. Table 6). Seen from another angle, the heaviest buyers in the shadow economy are those with primary/vocational education (58% respondents in that group).

In by-income breakdown, the penetration of shadow economy purchases is strongest among households with the lowest net incomes, below 2,000 zloty (€450) per household (64% respondents representing households in this income bracket). Among the researched towns of Mazowieckie Voivodship, the highest percentage of respondents who in 2015 purchased from the second economy with a view to economising was in Żyrardów (56%) and Ciechanów (54%), and the lowest in Płock - 25% and Sochaczew - 20%¹⁸.

6. WHAT THE CRISIS TAUGHT POLISH CONSUMERS

In the past quarter-century, and especially in the early, traumatic years of transition, Polish consumers often found themselves compelled to adjust to the changing economic conditions. Following the switch from a centrally planned economy towards a free market system, real incomes took a nosedive and people had to reinvent themselves in the new economic realities.

With the “shock therapy” receding into the past, living standards and consumption levels gradually began to recover and Poles grew accustomed to hard economic constraints when planning their consumer spending. In step with these processes, a modern consumer society could be seen emerging in Poland, complete with a fascination for the world of shiny merchandise and shopping malls. With the economy picking up speed, expansive consumerism and materialistic values found a fertile ground among the growing numbers of Polish consumers.

The crisis of the 21st century's first decade came as a cold shower for the consumer spree which was largely credit-financed (especially with respect to real estate and certain durables). Polish consumers and households were thus required to sit a test – so to speak – of maturity in conditions of a modern capitalist economy, with its natural cycles of expansion and contraction. It is fair to say that they passed this test, while enriching themselves with new insights and experiences.

After a period of uncritical enthusiasm over the new system (a syndrome of “Alice in capitalist wonderland”), Polish consumers have grown more mature, more aware and better aligned with the realities of a free market economy¹⁹. The recent economic crisis thus had a positive side to it, by toughening Polish consumer and households, and injecting in them a resistance to the vicissitudes of modern-day cyclical fluctuations. Adjustment to the crisis-induced changes in economic conditions was more mature than in the

¹⁸ Anna Dąbrowska, Mirosława Janoś-Kresło, Bogdan Mróz, Teresa Słaby. 2015. Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu – II etap. *Gospodarstwa miejskie – badania empiryczne*, op. cit.

¹⁹ Bogdan Mróz, *Konsument w globalnej gospodarce, Trzy perspektywy*. 2013. Warszawa, Oficyna Wydawnicza, Szkoła Główna Handlowa.

early stages of the country's systemic transformation in the early 1990s, when a trauma of crashing into market economy realities was followed by a swift increase in consumption.

Still, the Polish consumers and households have yet to match their counterparts in the most advanced capitalist countries when it comes to reading the macroeconomic signals that preceded a downturn and quickly adjusting to the changing economic conditions. This is understandable, remembering that the building of economic awareness and smart consumer education require a lot of time to complete and have to be backed by "empirical tests" of how economic perturbations influence the everyday life of consumers and households, bringing new experiences in the process.

It is hard to establish unequivocally how much the change in Poles' living conditions induced by economic slowdown has influenced subjective assessments of the quality of peoples' lives. It can only be surmised that where consumption of certain goods and services caved in, this found reflection in lower subjective assessments of the quality of life in those households. In other households, the assessment of how economic slowdown has impacted the quality of life was strongly diversified, in accordance with the extent of deprivation of needs, levels of aspiration, membership in certain social/occupational groups, etc.

Polish households took an attempt to limit the consequences of economic slowdown by taking various kinds of remedial action and adaptation to the changed crisis-time economic conditions. The adjustment effort was focused on seeking to keep the pre-crisis living standards and consumption levels, giving up on the meeting of some needs, revising consumption priorities of household members, and cutting down on some consumer expenditures.

Poland is a country "working its way up", where consumption and quality of life still lag far behind the most advanced capitalist nations. Some consumers, seeking to catch up in a civilisation race and yearning for Western affluence, have turned to credit as a means of fulfilling their rampant consumer aspirations and financing purchases of some consumer goods (especially homes/apartments, cars, furniture, consumer electronics, home appliances, etc.). This led to an increase in households debt and problems with repayment. It would certainly be a welcome development if both lenders and borrowers in Poland took to heart the tenets of responsible lending and borrowing. Large-scale public education campaigns would be welcome here. Consumers should realise that the consequences of their decisions about going into debt will have to be borne for years to come, and that the price of chasing consumer goods and living beyond one's means may prove to be excessive. It is to be hoped that this will be among the key lessons drawn from the latest economic crisis by Polish consumers and households.

7. CONCLUDING REMARKS

While the consequences of the latest crisis for the Polish economy have been less painful than in other countries and coming with some delay, the economic slowdown did make some impact on consumers and households. Slower growth of the official sector had the effect of curtailing income-earning opportunities and causing problems with the balancing of many households' budgets.

The present article highlights selected aspects of Polish households' efforts to adjust to the consequences of the economic crisis. The analysis of changes in the level and structure of consumption spending leads one to conclude that Polish households have demonstrated

an ability to adjust to the changing economic realities, as reflected in their planning family budgets more rigorously, restricting and/or rationalising some consumer spending items, giving up on the satisfaction of some higher-order needs, controlling expenditure on electricity/gas/water, looking for new sources of income, working in the shadow economy, etc.

One could therefore venture the opinion that, to a certain extent, the latest economic crisis played an educational role, by giving Polish consumers and households a lesson in how to function in a free-market capitalist economy where cyclical ups and downs are a matter of course. Importantly, it has been a key takeaway from the crisis for consumers that economic growth has its limits, and that the path of rampant consumerism, debt and living beyond one's means may lead many of them into a deadly trap.

REFERENCES

- [1] Analiza sytuacji gospodarczej Polski w 2014 r. 2015. Warszawa, Ministerstwo Gospodarki, March.
- [2] Czy Polacy boją się kryzysu. 2012. Komunikat CBOS, BS/2/2012, Warszawa, January.
- [3] Dąbrowska Anna, Janoś-Kresło Mirosława, Mróz Bogdan, Słaby Teresa. 2015. Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu – II etap. Gospodarstwa miejskie – badania empiryczne, Warszawa, Szkoła Główna Handlowa, October.
- [4] Diagnoza Społeczna 2013. Warunki i jakość życia gospodarstw domowych. Polaków – Raport. [Special issue]. DOI: 10.5709/ce.1897-9254.99, available at: <http://www.ce.vizja.pl/en/issues/volume/7/issue/3.1>, accessed 20 January 2016.
- [5] Goyal Sandeep, Sergi Bruno S., Jaiswal Mahadeo P. 2016. Understanding the challenges and strategic actions of social entrepreneurship at the base of the pyramid. "Management Decision", Vol. 54, No. 2, pp. 418-440.
- [6] Jak nam się żyje? Materialny wymiar życia rodzin. 2014. Komunikat CBOS nr 44/2014, Warszawa, April.
- [7] Kryzys czy porządki? Rośnie handel rzeczami używanymi. 2014. Available at: <http://www.wprost.pl/ar/396943/Kryzys-czy-porzadki-Rosnie-handel-rzeczami-uzywanymi-/#an2143388771>, accessed 18 December 2014.
- [8] Living conditions in the European Union. 2014. Eurobarometer Standard 81, report, Spring 2014 – TNS opinion & social, Brussels, European Commission.
- [9] Mróz Bogdan. 2013. Konsument w globalnej gospodarce, Trzy perspektywy, Warszawa, Oficyna Wydawnicza, Szkoła Główna Handlowa.
- [10] Mróz Bogdan. 2009. Rola szarej strefy w zaspokajaniu potrzeb polskich konsumentów w warunkach kryzysu gospodarczego, in: Reakcje polskiego konsumenta na kryzys gospodarczy, ed. by Teresa Słaby, Warszawa, Szkoła Główna Handlowa.
- [11] Mróz Bogdan (ed.). 2015. Zmiany zachowań polskich gospodarstw domowych pod wpływem kryzysu, Warszawa, Szkoła Główna Handlowa.
- [12] Odczuwane i przewidywane konsekwencje kryzysu. 2009. Komunikat CBOS, BS/51/2009, Warszawa, March.
- [13] Panek Tomasz, Białowolski Piotr, Kotowska Irena, Czapiński Janusz. 2013. Warunki życia. Zasobność materialna, in: Diagnoza Społeczna 2013. Warunki i jakość życia gospodarstw domowych. Polaków - Raport. [Special issue]. DOI: 10.5709/ce.1897-9254.99, available at: <http://www.ce.vizja.pl/en/issues/volume/7/issue/3.1>, accessed 20 January 2016.
- [14] Roczne wskaźniki makroekonomiczne. 2015. Warszawa, Główny Urząd Statystyczny.
- [15] Słaby Teresa (ed.). 2009. *Reakcje polskiego konsumenta na kryzys gospodarczy*, Warszawa, Szkoła Główna Handlowa.
- [16] Wydatki Polaków: wprowadzamy w domu politykę oszczędności. 2016. http://forsal.pl/artykuly/689874,wydatki_polakow_wprowadzamy_w_domach_polityke_oszczednosci.html, accessed: 16 January 2016.

- [17] Zmiany w postrzeganiu kryzysu i zachowaniach ekonomicznych Polaków. 2013. Komunikat CBOS, BS/152/2013, Warszawa, October.

WPLYW KRYZYSU GOSPODARCZEGO NA ZACHOWANIA KONSUMPCYJNE POLSKICH KONSUMENTÓW

Kryzys gospodarczy, który z różną intensywnością odczuło wiele krajów na świecie nie pozostał bez wpływu na zachowania polskich konsumentów i gospodarstw domowych. Spowolnienie gospodarcze uruchomiło całą serię reakcji dostosowawczych i strategii adaptacyjnych do zmienionych kryzysowych realiów gospodarowania. Wiele gospodarstw domowych, zwłaszcza dysponujących niższymi dochodami, zmuszonych było ograniczyć wydatki konsumpcyjne i zaspokojenie niektórych potrzeb oraz zrewidować przedkryzysowe wzorce konsumpcji. W Polsce konsekwencje ostatniego kryzysu gospodarczego nie były tak dramatyczne, jak w innych krajach, jednak spowolnienie gospodarcze wpłynęło na standard życia i zachowania polskich konsumentów oraz gospodarstw domowych, skutkując m.in. racjonalizacją ich zachowań i wydatków konsumpcyjnych. Można również sądzić, że ostatni kryzys gospodarczy skłonił polskich konsumentów do refleksji nad przedkryzysową gorączką konsumpcji opartej na zaciąganiu kredytów, rewizji systemów wartości, a także do porzucenia, lub przynajmniej ograniczenia, materialistycznego nastawienia do życia. Podstawowym celem artykułu jest naświetlenie najważniejszych zagadnień związanych z wpływem kryzysu na zachowania konsumpcyjne polskich konsumentów na podstawie dostępnych wyników różnych badań empirycznych oraz własnych badań ankietowych przeprowadzonych w 2009r. i w 2015r. Pogłębiona analiza nowych pokryzysowych tendencji w zachowaniach konsumpcyjnych i wzorach konsumpcji współczesnych Polaków, odwołująca się do dostępnych danych statystycznych, raportów badawczych oraz wyników badań empirycznych może dostarczyć użytecznych wskazówek i rekomendacji dla decydentów kształtujących politykę gospodarczą, menedżerów i korporacyjnych strategów.

Słowa kluczowe: kryzys gospodarczy, zachowania konsumentów, Polska

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АДЕКВАТНОСТЬ КРИТЕРИЕВ РИСКА И ОШИБОК ДИАГНОСТИРОВАНИЯ ТЕХНИЧЕСКОГО СОСТОЯНИЯ ТРАНСПОРТНЫХ СИСТЕМ

В статье показана адекватность вероятностных характеристик диагностирования объекта транспортной системы, включая ошибки 1-го и 2-го рода, и количественные меры рисков оценки технического состояния объектов диагностики. При анализе нестандартных (проблемных) ситуаций транспортных процессов, в которых наблюдается появление совместных событий, таких как отказ уже эксплуатируемого объекта диагностирования и транспортного происшествия, вызванного этим отказом, оказывается, что следует учитывать количественную меру риска диагностирования, как комплексную характеристику, принимая во внимание все риски, возникающие в процессе диагностического контроля объектов.

Следующим шагом в исследовании организационно-технических рисков научно-исследовательских проектов в области транспорта является переход к нечетким моделям взаимозависимости категорий, участвующих в рассматриваемых процессах. Данная задача является также непростой – она требует экспертной оценки субъектов, специалистов в области транспортных процессов и технологий, участвующих в научно-исследовательских проектах транспортной тематики, начиная с постановки проблем, решения их, реализации принятых решений и сопровождения полученных результатов в эксплуатационных условиях.

Подтверждение адекватности критериев риска и ошибок диагностирования технического состояния транспортных систем позволяет с достаточной достоверностью идентифицировать и предметно определить сущность функций принадлежности итогового показателя критерия риска. Данный факт получен при допущении совпадения координатных плоскостей функций принадлежности, совпадающих друг с другом а именно пределами их изменения от 0 до 1. Основные субъективные оценки итоговой функции принадлежности критерия риска при этом превращаются в задачу объективного характера.

Ключевые слова: Транспортная система, техническая диагностика, риск, нечеткая логика, функция принадлежности, техническое состояние объекта.

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1. ВВЕДЕНИЕ

После получения диагностической информации о состоянии объекта диагностирования (ОД) может быть принята одна из гипотез: Γ_1 – ОД исправен и Γ_2 – ОД неисправен (рис.1)⁴. Но в результате влияния нестабильности диагностических параметров ОД, недостаточности точностных характеристик функционирования диагностических комплексов (ДК), помех со стороны среды диагностирования появляется возможность ошибочных решений процесса диагностирования: часть работоспособных ОД признается неработоспособной, а часть неисправных объектов принимается исправными и допускаются к эксплуатации по назначению. Данный факт показан на рис.1, где:

– $\Gamma_1 = \{N_{11}, N_{10}\}$, гипотеза N_{11} состоит в том, что ОД является исправным и это соответствует истинному техническому состоянию ОД, гипотеза N_{10} заключается в том, что ОД является неисправным при фактической исправности объекта контроля;

$\Gamma_2 = \{N_{00}, N_{01}\}$, гипотеза N_{00} заключается в том, что ОД является неисправным и это соответствует фактическому техническому состоянию (ТС) объекта диагностирования, гипотеза N_{01} – ОД является исправным, что не соответствует истинному ТС ОД.

Гипотезы N_{11} и N_{00} являются правильными, а N_{10} и N_{01} – неправильными. Из сказанного следует сделать вывод: правильные решения не представляют интереса с точки зрения анализа организационно-технических рисков научно-технических и научно-исследовательских проектов, согласно которых исследуются, разрабатываются, реализуются, внедряются и эксплуатируются диагностические комплексы транспортных систем. Объектом исследований должны стать гипотезы N_{10} и N_{01} (рис.2).

2. ОСНОВНАЯ ЧАСТЬ

Решение о неисправности исправного ОД приводит к повторному ремонту объекта контроля, то есть дополнительным материальным затратам, и так может быть много раз. Гипотеза N_{01} при которой принимается решение об исправности фактически неисправного объекта диагностирования является наиболее отрицательным выводом. Латентно неисправный ОД, установленный на транспортное средство, несет в себе повышенный риск внезапного отказа и, как следствие, реальную возможность возникновения транспортного происшествия, иногда с катастрофическими последствиями.

⁴ Данилевський В.В. Класифікація організаційно-технічних ризиків на станах виконання науково-дослідних проектів /В.В.Данилевський//Збірник доповідей 14-ої Міжнародної науково-практичної конференції «Ринок послуг комплексних транспортних систем та прикладні проблеми логістики».– К.:НТУ, 2012.–С.170–174.

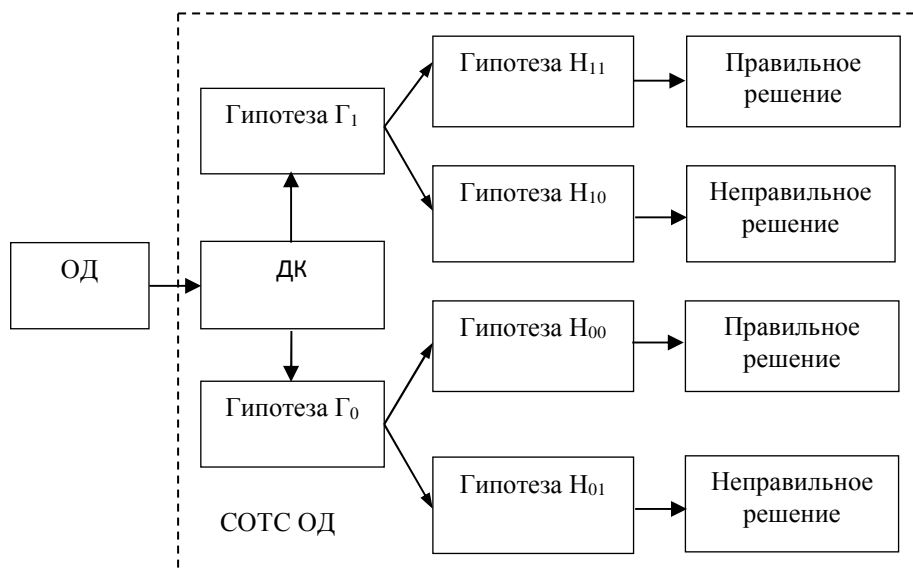


Рис.1. Процедура принятия решения в процессе диагностики ОД на диагностическом комплексе.

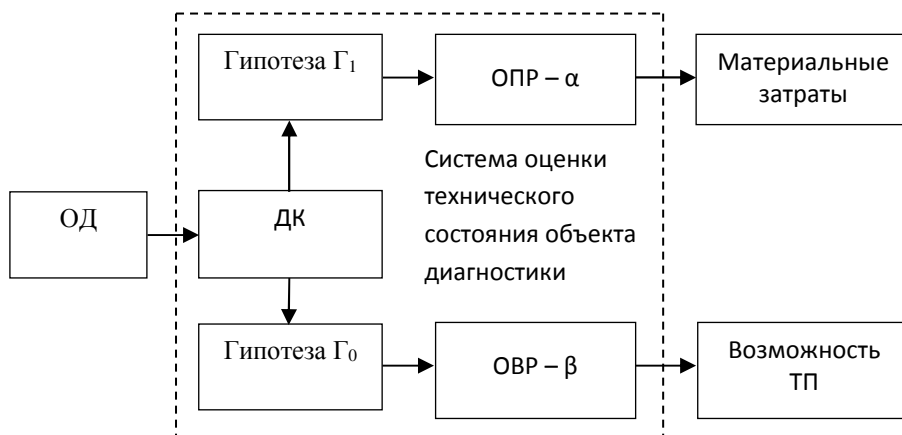


Рис.2. Ошибки 1-го и 2-го рода, приводящие к возможным негативным последствиям в процессе эксплуатации ОД.

Ошибки определения значения диагностического параметра в процессе контроля ОД на диагностическом комплексе называются: при гипотезе H_{10} – ошибка 1-го рода (ОПР), обозначается α , а при гипотезе H_{01} – ошибка 2-го рода (ОВР),

обозначается – β (рис. 2)⁵. Следовательно, можно заключить, что организационно-технические (ОТ) риски, возникающие в процессе выполнения научно-исследовательских проектов реализующих разработку и внедрение новых транспортных систем (ТС) и их ДК - а сейчас именно так ставится вопрос, так как практически на всех видах транспорта интенсивно используется эксплуатация ТС по состоянию с контролем параметров - адекватны рискам, которые формируются в системах оценки технического состояния ОД на диагностических комплексах.

В первую очередь, данные риски воплощаются в ошибках α и β . Риск, возникающий при признании исправного ОД неисправным – $R_{ин}$, адекватен ошибке 1-го рода α , а $R_{ни}$ – ошибке 2-го рода β (рис.3).

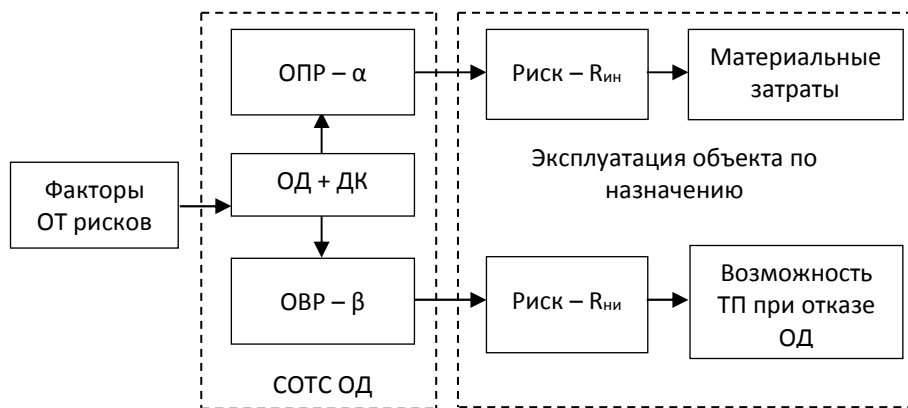


Рис.3. Адекватность ошибок 1-го и 2-го рода процесса диагностики количественным мерам организационно-технических рисков оценки технического состояния объекта диагностики.

Размерности ошибок и рисков совпадают – первые имеют функцию распределения, как вероятностная характеристика, на интервале $[0,1]$, вторые - функции принадлежности, как нечеткие множества, на том же интервале. Многие исследователи, работающие в области рискологии, рассматривают разного рода риски как вероятности, хотя строго говоря, риски являются возможностными характеристиками категории бытия и подчиняются зависимостям в рамках математического аппарата нечеткой логики⁶.

Вместе с тем, при анализе нестандартных (проблемных) ситуаций транспортных процессов, при которых наблюдается появление совместных событий – отказа уже эксплуатируемого ОД и транспортного происшествия, вызванного этим отказом, выявляется тот факт, что следует учитывать количественную меру риска

⁵ Давыдов П.С. Техническая диагностика радиоэлектронных устройств и систем.– М.: Радио и связь, 1988. – 256с.

⁶ Петрашевский О.Л. Нечеткие теоретико-множественные модели процесса обеспечения безопасности движения автомобильного транспорта / О.Л. Петрашевский, И.П. Гамеляк, А.В. Алексеенко // Проблемы транспорту. Збірник наукових праць: Випуск 8.–К.:НТУ, 2011.– С.30-41.

диагностирования как комплексную характеристику, принимая во внимание все риски, возникающие в процессе диагностического контроля объектов. И это следует делать по каждому из контролируемых параметров. Поэтому на рис.4 представлена структура формирования риска диагностики – R_d , начиная с нижних уровней.

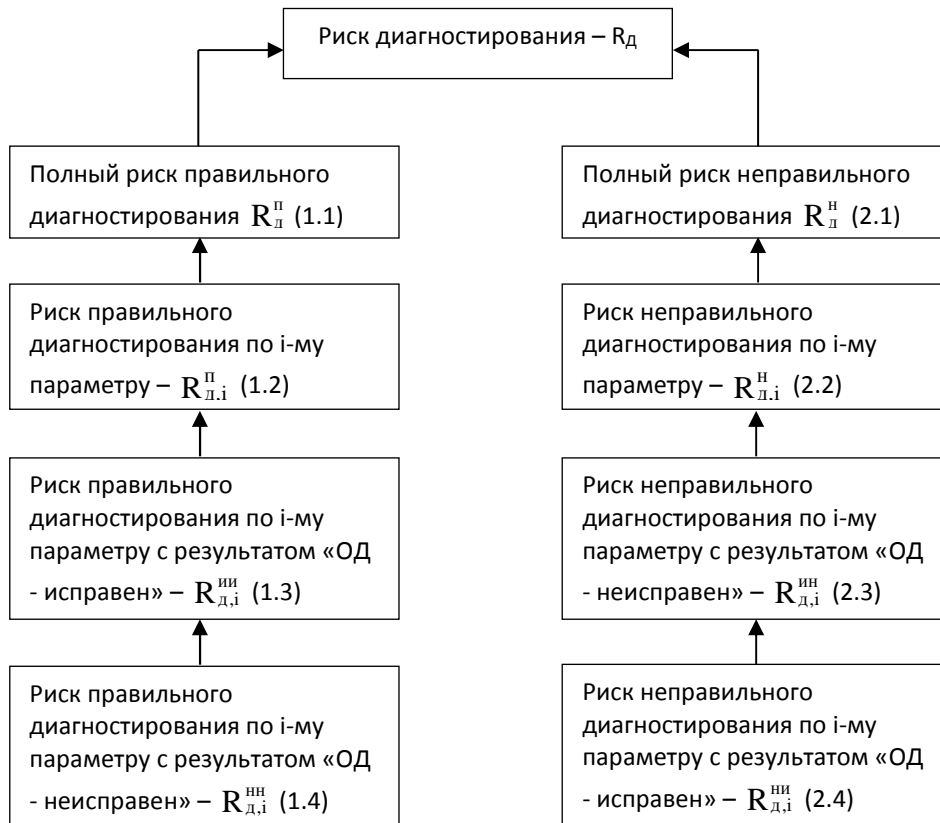


Рис.4. Структура формирования риска диагностики ОД на ДК.

Зная вероятности появления событий $P(H_{11})$, $P(H_{00})$, $P(H_{10})$, $P(H_{01})$, как реализаций соответствующих гипотез, можно определить всю номенклатуру рисков. Правда следует принять следующие допущения:

- диагностические параметры, общим количеством $i = 1, n$, являются независимыми друг от друга переменными и обладают каждый своими допусками, что фактически, в реальности не так;
- аналитические выражения для определения вероятностей гипотез, которые в практике также взаимосвязаны, весьма сложны, поэтому есть смысл своевременно перейти на использование математического аппарата нечетной логики (теории возможностей Л.Заде) и субъективных экспертных баз знаний;

– диагностические комплексы вносят собственные погрешности в измеряемые параметры ОД, но всегда находятся в исправном состоянии, в действительности же необнаруженный отказ ДК приводит к тому, что он может браковать все контролируемые объекты диагностики.

С учетом вышеприведенного формулы для вычисления рисков снизу вверх – это показывает двойная нумерация на рис.4 - имеют следующий вид:

$$(1.4) \quad R_{д,i}^{нн} = 1 - P_i(H_{00}); \quad (2.4) \quad R_{д,i}^{ни} = \beta_i = 1 - \frac{P_i(H_{11})}{P_i(H_{11}) + P_i(H_{01})};$$

$$(1.3) \quad R_{д,i}^{ии} = 1 - P_i(H_{11}); \quad (2.3) \quad R_{д,i}^{ин} = \alpha_i = 1 - \frac{P_i(H_{00})}{P_i(H_{00}) + P_i(H_{10})};$$

$$(1.2) \quad R_{д,i}^{\pi} = R_{д,i}^{ии} + R_{д,i}^{нн}; \quad (2.2) \quad R_{д,i}^{\eta} = R_{д,i}^{ин} + R_{д,i}^{ни} = \alpha_i + \beta_i;$$

$$(1.1) \quad R_{д}^{\pi} = \sum_{i=1}^{\pi} R_{д,i}^{\pi}; \quad (2.1) \quad R_{д}^{\eta} = \sum_{i=1}^{\eta} R_{д,i}^{\eta}.$$

$$\text{В итоге: } R_{д} = R_{д}^{\pi} \cdot R_{д}^{\eta}.$$

3. ВЫВОДЫ

Таким образом, показана адекватность вероятностных характеристик диагностирования ОД транспортной системы, включая ошибки 1-го и 2-го рода, и количественные меры рисков оценки технического состояния объектов диагностики. Следующим шагом в исследовании организационно-технических рисков научно-исследовательских проектов в области транспорта будет переход к нечетким моделям взаимозависимости категорий участвующих в рассматриваемых процессах.

Данная задача является также непростой – она требует экспертной оценки субъектов, специалистов в области транспортных процессов и технологий, участвующих в научно-исследовательских проектах транспортной тематики, начиная с постановки проблем, решения их, реализации принятых решений и сопровождения полученных результатов в эксплуатационных условиях.

СПИСОК ЛІТЕРАТУРИ

- [1] Данилевський В.В. Класифікація організаційно-технічних ризиків на станах виконання науково-дослідних проектів /В.В.Данилевський//Збірник доповідей 14-ої Міжнародної науково-практичної конференції «Ринок послуг комплексних транспортних систем та прикладні проблеми логістики».– К.:НТУ, 2012.–С.170–174.
- [2] Давыдов П.С. Техническая диагностика радиоэлектронных устройств и систем.– М.: Радио и связь, 1988. – 256с.
- [3] Петрашевский О.Л. Нечеткие теоретико-множественные модели процесса обеспечения безопасности движения автомобильного транспорта / О.Л. Петрашевский, И.П. Гамеляк, А.В. Алексеенко // Проблемы транспорта. Збірник наукових праць: Випуск 8.– К.:НТУ, 2011.– С.30-41.
- [4] <http://matlab.exponenta.ru/fuzzylogic/>

**ADEQUACY CRITERION OF RISK AND ERRORS
TECHNICAL DIAGNOSTIC CONDITION OF TRANSPORT SYSTEMS**

The article shows the value of probabilistic characteristics of diagnosing object diagnosing transport system, including errors of the 1st and 2nd kind, and quantitative measures of risk assessment of technical condition of diagnosis. In the analysis of non-standard (problematic) situation in the transport processes in which there is the emergence of common events, such as the refusal of the object of diagnosing, already being in operation, and the case of transport caused by the refusal to disclose the fact that one should take into account the quantitative risk measures diagnosing the complex characteristics, taking into account all the risks arising in the course of the diagnostic control objects.

The next step in the study of organizational and technical risks of research projects in the field of transport will go to an imprecise model of interdependence categories involved in these processes. This task is also difficult - it requires professional judgment of entities, experts in the processes and technologies involved in research projects within transport, from the formulation of the problems and their solutions, implementation of decisions implementing and tracking results in the operating conditions.

The confirmation of the adequacy of the risk criteria and error diagnostics of the technical condition of transportation systems allows, with sufficient reliability, to identify and objectively determine the substance of the final membership rate risk criteria. This statement is the result, obtained assuming the intersection of the coordinates that overlap with each other within changes from 0 to 1. The basic assessments of final function risk criterion transform the objective problem.

Keywords: Transport system, technical diagnostics, risk, fuzzy logic, membership function, technical state of an object

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THE APPLICATION OF THE AHP RISK-BENEFIT ASSESSMENT IN CERTIFICATION OF ORGANIC FARMING

The objective of the research is to develop the risk-benefit assessment models based on the Analytic Hierarchy Process (AHP) and test them in certification of organic products. The ISO Guide 65 /EN 45011 standard and Council Regulation (EC) No 834/2007 oblige the certification bodies to conduct risk assessment during certification process. However, no specific methodology of risk assessment has been provided in this respect. The AHP decomposes a complex problem into a hierarchy involving goal, criteria, and decision variants. Two hierarchical models, risk and benefit, were constructed based on the relevant publications and consultations with the key experts from one of the nine Polish third party certification bodies (CB), with experience in certification of organic products. Both models have the same decision variants considered in the process of surveillance. The results show that parallel production of conventional products and production of the same goods in organic and conventional versions appeared to be the major risk factors in organic farming. In benefit model, increased trust to certified products and minimization of costs of improper decisions were the most important. The AHP-based models proved very useful in risk-benefit assessment of organic producers and demonstrated a new approach to risk assessment. However, several conditions must be fulfilled before their implementation in practice, such as adjustment to individual needs of a certification body and refinement of the quality management system.

Keywords: AHP, certification, risk-benefit analysis, risk assessment, organic farming, third party certification

1. WPROWADZENIE

In recent years, a dynamic development of the market for organic products can be observed. There are well described benefits and difficulties of organic farming. Organic farming may provide two types of economic benefits. It may reduce rural poverty by providing market access and higher profits through a combination of higher prices and

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more resilient yields. In developing countries, organic farming may potentially boost the local economy in the long-term perspective⁶. There are researches that discuss economic effects of the organic production system⁷. Under the current EU law, the basic document containing the requirements for organic production is Council Regulation (EC) No 834/2007 of 28 June 2007⁸ on organic production and labeling of organic products and repealing Regulation (EEC) No 2092/91 and the regulations implementing this Regulation. According to this regulation, member states shall set up a system of controls and designate one or more competent authorities responsible for controls in conformity with Regulation (EC) No 882/2004. This process is supervised by each EU member state, which is responsible for establishing an inspection system with the competent authorities to ensure adherence to the obligations established in the organic Regulation (EC) 834/2007⁹. Member states could choose who performs the certification: a public authority or a third party certification bodies¹⁰. The third-party certification is a conformity assessment activity that is performed by the control body (CB), that is independent of the person or organization that provides the object, and of user interests in that object¹¹. In Poland, competent authority had delegated control tasks to third party certification bodies. This companies must meet the criteria describe in article 27.5 of the Council Regulation (EC) No 834/2007. One of the requirements imposes on the certification body the obligation to implement management system according the ISO Guide 65 or European Standard EN 45011 or its new edition ISO 17065¹².

Requirements of the ISO Guide 65 /EN 45011 standard and Council Regulation (EC) No 834/2007¹³ forced certification bodies to use the risk assessment process during the certification process. Moreover, in Regulation (EC) No 882/2004, as a general rule, the official food and feed controls shall be carried out regularly, on a risk basis and with appropriate frequency. According to all these requirements, certification bodies that certify organic farming products are forced to implement risk assessment approach in their work. The implementation of standards within third party certification is assured through a rig-

⁶ Kleemann L., Abdulai A., *Organic certification, agro-ecological practices and return on investment: Evidence from pineapple producers in Ghana*, "Ecological Economics" 93 (2013), pp. 330–341.

⁷ Beuchelt T.D., Zeller M., *Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers*, "Ecological Economics" 70 (2011), pp. 1316-1324; Uematsu H., Mishra A.K., *Organic farmers or conventional farmers: Where's the money?*, "Ecological Economics" 78 (2012), pp. 55-62; Lobley M., Butler A., Reed M., *The contribution of organic farming to rural development: An exploration of the socio-economic linkages of organic and non-organic farms in England*, "Land Use Policy" 26(3), (2009), pp. 723-735; Demiryurek K., *Analysis of information systems and communication networks for organic and conventional hazelnut producers in the Samsun province of Turkey*, "Agricultural Systems" 103 (2010), pp. 444-452.

⁸ EC, Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91

⁹ Ibidem.

¹⁰ Zorn A., Lippert Ch., Dabbert, S., *An analysis of the risks of non-compliance with the European organic standard: A categorical analysis of farm data from a German control body*, "Food Control" 30 (2013), pp. 692-699; http://ec.europa.eu/agriculture/organic/consumer-confidence/inspection-certification_en.

¹¹ ISO, ISO/IEC 17000:2004, *Conformity assessment. Vocabulary and general principles* (<https://law.resource.org>).

¹² EC, Council Regulation (EC) No 834/2007, op. cit.

¹³ Ibidem.

orous conformity assessment mechanism¹⁴. A typical organic farming certification system should be the sixth modified system according to the guide ISO/IEC Guide 67:2004¹⁵. This certification system consists of following elements: (1) Determination of characteristics by inspection; (2) Review (evaluation); (3) Decision on certification; (4) Licensing; and (5) Surveillance by: (a) testing of samples, and (b) assessment of the production process. All operators during the certification process shall be subject to a physical inspection at least once per year. Moreover, in the surveillance process additional control visits and collection of samples for testing shall be carried out based on the assessment of the risk of non-compliance with the organic production rules. The risk analysis procedure in certification body should be designed based on the Regulation (EU) No 392/2013¹⁶, which underlines two important issues: 1) the result of the risk analysis provides the basis for determining the intensity of the unannounced or announced annual inspections and visits, 2) the selection of operators to be submitted to unannounced inspections and visits is determined on the basis of the risk analysis and that these are planned according to the level of risk.

The main objective of the risk-based inspection approach is to focus resources on risky operators with regards to the frequency and intensity of controls. Generally, risk based control systems enhance the effectiveness and efficiency of controls by prioritizing and directing resources towards relatively risky operators¹⁷. The risk based-approach in certification process contributes to enhanced certification quality¹⁸. Nonetheless, it has not been specified how to conduct such risk analysis and which methods should be used for this purpose. Different CBs have different risk-based systems¹⁹. The structure and function of such risk-based inspection systems have not been deeply analyzed²⁰.

In this study, the AHP-based models of risk-benefit assessment are developed and tested to select the best surveillance scenario and match it to a given producer. The AHP (Analytic Hierarchy Process) is a well-known and widely used method to solve a variety of decision problems²¹. It was developed in 1970's by the American mathematician, Thomas L. Saaty and since that time, it has gained an increasing attention in the literature. Compared with other multicriteria decision support methods such as ELECTRE, PROMETHEE& GAIA, or VDA, the AHP is the most popular and powerful contemporary technique for decision making and expert judgments evaluation²². It has been applied in a

¹⁴ Konefal J., Hatanaka M., *Enacting third-party certification: A case study of science and politics in organic shrimp certification*, "Journal of Rural Studies" 27 (2011), pp. 125-133.

¹⁵ ISO, ISO/IEC Guide 67:2004 Conformity assessment. Fundamentals of product certification (<https://law.resource.org>).

¹⁶ EC, Commission Implementing Regulation (EU) No 392/2013 of 29 April 2013 amending Regulation (EC) No 889/2008 as regards the control system for organic production (<http://eur-lex.europa.eu>).

¹⁷ Zorn A., Lippert Ch., Dabbert S., *Supervising a system of approved private control bodies for certification: The case of organic farming in Germany*, "Food Control" 25 (2012), pp. 525-532; Zorn A., Lippert, Ch. Dabbert, S., *An analysis...*, op. cit., pp. 692-699.

¹⁸ Jahn G., Schramm M., Spiller A., *The Reliability of Certification: Quality Labels as a Consumer Policy Tool*, "Journal of Consumer Policy" 28 (2005), pp. 53-73.

¹⁹ Zorn A., Lippert Ch., Dabbert S., *Supervising a system...*, op. cit., pp. 525-532.

²⁰ Albersmeier F., Schulze H., Jahn G., Spiller A., *The reliability of third party certification in the food chain: from checklists to risk-oriented auditing*, "Food Control" 20(10), (2009), pp. 927-935.

²¹ Saaty T.L., Forman E.H., *The Hierarchon. A Dictionary of Hierarchies (Analytic Hierarchy Process)*, RWS Publications, Pittsburgh, 1992.

²² Forman E., Peniwati K., *Aggregating individual judgments and priorities with the Analytic Hierarchy Process*, "European Journal of Operational Research" 108 (1998), pp. 165-169.

variety of fields and by many organizations, including private companies and public bodies²³. It decomposes a complex problem into hierarchical structure consisting of goal, criteria and decision variants, then elicits the relative importance / preference of these elements, and finally, calculates their weights (priorities). An element with the highest weight indicates the best solution. The AHP has been successfully applied in various areas of agricultural sciences²⁴, for example to select an appropriate irrigation method by the farmers²⁵ or to develop useful criteria for assessing diversification activities and to provide a ranking of different diversification activities in continuous mono-cropping of tobacco²⁶.

The objective of the current study is to demonstrate another potential application of the AHP in agriculture, which is certification of organic products. The research has been driven by the real need of certification bodies to develop a relatively simple and efficient method of risk assessment of clients (organic producers) applying for certification. Hence, models and templates have been created and tested by the panel of experts from the third party certification body. The procedure of the AHP-based risk assessment involves two stages: (1) deriving general models of risks (R) and benefits (B), and (2) deriving individual R/B ratio. Such approach allows from one hand for standardization of the risk assessment process in the certification company, and from the other hand, it takes into account individual client and his specific needs and risk factors. Benefits are not specified by the regulations, yet have been identified during the discussions with the owners of the certification body. Although the risk assessment procedures do not require benefit analysis, it appeared very useful in practice and facilitated making final decision on the best variant of surveillance.

2. THE APPLICATION OF THE AHP IN RISK-BENEFIT ASSESSMENT

AHP decomposes a complex, and multifaceted problem into a hierarchy consisting of goal (always at the top level of hierarchy), criteria that are evaluated for their importance to the goal, and alternatives that are evaluated for how preferred they are with respect to each criterion. Criteria can be further divided into sub-criteria. A conceptual view of such a four-level hierarchy is shown in Figure 1 and is used to structure a majority of decision problems.

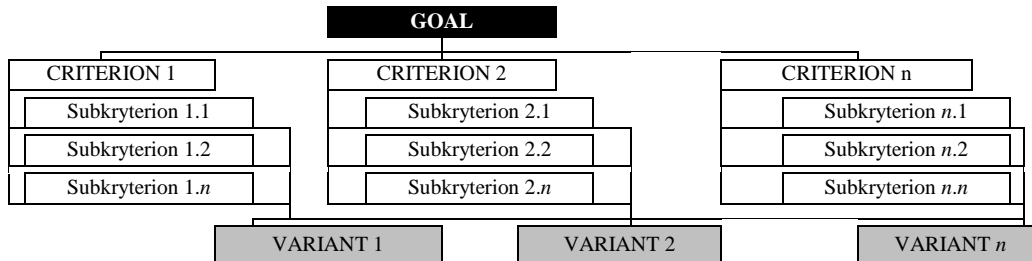
²³ Saaty T.L., *Relative Measurement and Its Generalization in Decision Making. Why Pairwise Comparisons are Central in Mathematics for the Measurement of Intangible Factors, The Analytic Hierarchy/Network Process*, "Rev. R. Acad. Cien. Serie A. Mat.", 102(2), (2008), pp. 253-318.

²⁴ Alphonse Ch., *Application of the Analytic Hierarchy Process in Agriculture in Developing Countries*, "Agricultural Systems" 53 (1997), pp. 97-112.

²⁵ Karami E., *Appropriateness of farmers' adoption of irrigation methods: The application of the AHP model*, "Agricultural Systems" 87 (2006), pp. 101-119.

²⁶ Chavez M.D., Berentsen P.P.B.M., Oude Lansink A.G.J.M., *Assessment of criteria and farming activities for tobacco diversification using the Analytical Hierarchical Process (AHP) technique*, "Agricultural Systems" 111 (2012), pp. 53-62.

Figure 1. The four-level AHP hierarchical model.



Source: own research.

Once the hierarchical model has been structured for a decision problem, decision makers or experts make pairwise comparisons for each level of the hierarchy. The use of pairwise comparisons is considered as one of the major strengths of the AHP to derive accurate ratio scale priorities, as opposed to using traditional approaches of assigning weights. Pairwise comparison is the process of comparing the relative importance, preference, or likelihood of two elements (“children”) with respect to an element in the level above (“parent node”), in order to obtain priorities for the elements being compared²⁷, for example, each criterion is pairwise compared with respect to the goal, and each sub-criterion with respect to the “parent” criterion. Pairwise comparisons are conducted for all the parent/children sets of nodes²⁸. A “judgment” or “comparison” is the numerical demonstration of a relationship between two elements (given i and j) that share a common parent node. The input of the comparison of each element i with each element j is placed in the position of a_{ij} in a square matrix A in which the set of elements is compared with itself.

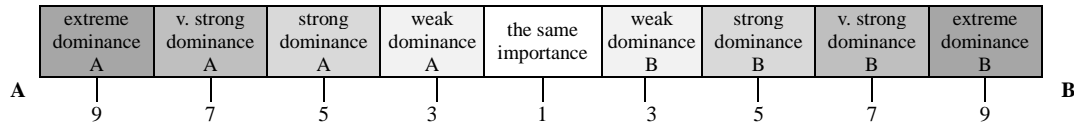
$$\mathbf{A} = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix} \quad (1)$$

Each judgment represents the dominance of an element in the column on the left over an element in the row on top. It therefore answers to two questions: (1) which of the two elements is more important (preferred, likely) with respect to a higher-level criterion, and (2) how strongly. The strength of dominance is measured on the bipolar nine-point fundamental scale, from “1” indicating the same importance (preference, likelihood) of two elements A and B , to “9” which corresponds to extreme dominance of A over B (or B over A , respectively) (Figure 2).

²⁷ Saaty T.L., *Decision Making with Dependence and Feedback. The Analytic Network Process*, second ed. RWS Publications, Pittsburgh, 2001.

²⁸ Prusak A., Stefanów P., *AHP – analityczny proces hierarchiczny. Budowa i analiza modeli decyzyjnych krok po kroku*, wyd. 1, C.H. Beck, Warszawa 2014.

Figure 2. The 9-point fundamental scale.



Source: own research.

One matrix results in “local priorities” of the children nodes with respect to the parent²⁹. There are several methods of deriving local priorities (also called weights), using for example: (1) dedicated software, (2) matrix multiplication, (3) geometric mean, and (4) arithmetic mean. Geometric mean is used quite frequently in the literature, although Saaty³⁰ claimed that it should not be used for more than three elements being compared at once. In this study, matrix multiplications were used to calculate the relevant priorities. “Global priorities” of subcriteria are derived from multiplication by the priority of the criterion with respect to the goal. Mathematical basis of the whole AHP process have been provided and widely explained by Saaty³¹.

Having calculated priorities, the AHP requires testing consistency of judgments. The consistency test is based on the use of consistency ratio (CR), which allows a certain level of acceptable deviations ($CR < 0,1$). When a pairwise comparison matrix fails to satisfy the consistency requirement, revisions are required to be made by a participating expert. The main source of inconsistency is redundancy of judgments inherent in all possible combinations of pairwise comparisons made within a group of elements, for example, nine criteria require making 36 comparisons, and causes difficulties in keeping them consistent³².

In reality, a majority of decisions are made by the team of experts rather than by a single decision maker. Thus, the AHP is often used for group settings, where members either discuss to achieve a consensus or stick to their individual judgments. Individual judgments can be aggregated in different ways of which the most widely applied are two: (1) the aggregation of individual judgments (AIJ), and (2) synthesizing individual priorities (AIP). Forman and Peniwati³³ suggested that the choice of method depends on whether the group is assumed to act together as a unit or as separate individuals. If the group acts in synergy, AIJ is the most appropriate, while AIP is appropriate for the latter. In the two cases, both the geometric mean and the arithmetic mean are used for aggregating the judgments. However, the authors recommend the use of the geometric mean as more consistent with both judgments and priorities of the AHP. In the case of the group members not being of equal importance, a weighted geometric mean can be used with AIJ or weighted geometric or arithmetic mean with AIP.

Certain problems need more advanced hierarchical structures than shown above in Figure 1, with additional factors such as stakeholders and their objectives³⁴. Most deci-

²⁹ Saaty T.L., *Fundamentals of Decision Making and Priority Theory with the Analytic Hierarchy Process*, Vol. VI of The AHP Series, Pittsburgh, 2006.

³⁰ Saaty T.L., *Decision Making for Leaders. The Analytic Hierarchy Process for Decisions in a Complex World*, RWS Publications, Pittsburgh, 2008.

³¹ Saaty T.L., *Fundamentals of Decision Making...*, op. cit.

³² Prusak A., Stefanów P., *Badania nad właściwościami metody AHP* (Operational features of the AHP method, in Polish), “Folia Oeconomica Cracoviensia” LII (2011), pp. 87-104.

³³ Forman E., Peniwati K., *Aggregating individual...*, op. cit., pp. 165-169.

³⁴ Saaty T.L., Forman E.H., *The Hierarchon...*, op. cit.

sions also require the use of two hierarchical models: risk and benefit, as one hierarchy does not always fully reflect the problem. In such a case, final decision is based on the relation between benefits and costs, derived as a Benefit/Cost ratio (B/C) or Benefit/Risk (B/R). It is calculated as the priority of an alternative in the benefit model and the priority of respective alternative in the cost model. In other words, the most preferred alternative is that which generates highest benefits at lowest costs. The B/C ratio may adopt the following values³⁵:

- B/C = 1 (benefits equal to costs or risks),
- B/C < 1 (costs or risks exceed benefits),
- B/C > 1 (benefits exceed costs or risks).

Despite the requirements of adopting only the risk model in the risk assessment specified by the regulation 834/2007³⁶, the benefit model has been additionally provided. In reality, most decisions are the results of risk- or cost-benefit trade-offs, and merely risks or costs do not reflect the entire problem. In the organic farming, CB and producers have different goals and expectations from the certification process, and look differently at the potential risks. However, both of them are also interested in gaining benefits, which forces them to compromise between costs and quality of the certification.

3. DESCRIPTION OF THE AHP RISK AND BENEFIT MODELS

The AHP hierarchical models were constructed based on the review of relevant publications and official documents, and following consultation with the key informants from the third party certification body. As the decision problem concerning organic farming requires assessment of risks and benefits (despite it is called “risk assessment”), two separate hierarchical models were developed. The risk model is presented in Table 1. It contains three obligatory risk assessment criteria specified in the Regulation (EC) No 889/2008³⁷, specifically: (1) results of previous controls; (2) quantity of products concerned; and (3) risk for exchange of products. Other criteria that certification body can use in risk assessment process include for example: type of operator (producer, processor, importer, and distributor), structure of operator (stages of production, type of staff, and number of premises), new operators, type and value of products, complaints/denunciations received, suspicion of fraud, and other criteria (EC, 2009). In the risk model, all non-obligatory criteria mentioned in the Guidelines have been included, after the discussions and comments of the experts from the certification body. The benefit model represents advantages to the certification body and its clients, although these benefits can differ (Table 2).

³⁵ Ibidem.

³⁶ EC, Council Regulation (EC) No 834/2007, op. cit..

³⁷ EC, Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control (<http://eur-lex.europa.eu>).

Tabel 1. Hierarchical model of risks.

GOAL: TO IDENTIFY THE MOST RISKY CONTROL SCENARIO BASED ON THE FOLLOWING CRITERIA	
Which criterion is more important with respect to the goal?	
1.	CRITERION 1: Type of organic products/processes
1.1.	Complexity of products
1.1.1.	High quantity of various ingredients used
1.1.2.	The use of non-organic products
1.1.3.	The use of yeast and yeast products
1.2.	Number of suppliers of raw materials
1.3.	Annual production / value of products
1.4.	Number of production stages
1.5.	External origin of raw materials
1.6.	Participation of subcontractors in organic production
1.7.	Destination of products (recipients)
2.	CRITERION 2: Implemented and certified systems of quality management and food safety assurance
3.	CRITERION 3: Characteristics of enterprise
3.1.	Size of enterprise (number of employees)
3.2.	Number of departments
3.3.	Staff characteristics (knowledge, period of employment, etc.)
3.4.	Localization of enterprise (i.e. at own or others premises)
4.	CRITERION 4: Parallel production of conventional products
4.1.	The same production line for organic and conventional products
4.2.	Production of the same goods in two versions: organic and conventional
5.	CRITERION 5: Information about the producer
5.1.	Opinions about the producer (reputation)
5.2.	Informal impressions about the previous cooperation
5.3.	Complaints and questions received
5.4.	Suspicion of fraud
5.5.	Failure to meet responsibilities
5.6.	Participation in the next stages of the food chain
6.	CRITERION 6: Experiences in certification of organic production
6.1.	New producers (no experience in certification)
6.2.	The so far changes of certification bodies
6.3.	Information about the producer from the Agricultural and Food Quality Inspection (public authority responsible for organic farming system in Poland)
7.	CRITERION 7: Results of the previous controls (audits)
7.1.	Number of the previous non-compliances
7.2.	Assessment of corrective and preventive actions
7.3.	Assessment of documentation of the quality management systems
3.1.	Size of enterprise (number of employees)
3.2.	Number of departments
3.3.	Staff characteristics (knowledge, period of employment, etc.)
3.4.	Localization of enterprise (i.e. at own or others premises)
VARIANTS	
Which variant of surveillance (control scenario) is more risky with respect to the above criteria / sub-criteria?	
1.	VARIANT 1: Standard control plan (SCP)
2.	VARIANT 2: SCP + testing samples from production or SCP + additional audit
3.	VARIANT 3: SCP+ testing samples from production + additional audit

Source: own research.

Table 2. Hierarchical model of benefits.

GOAL: TO IDENTIFY THE MOST BENEFICIAL CONTROL SCENARIO BASED ON THE FOLLOWING CRITERIA:	
<i>Which criterion is more important with respect to the goal?</i>	
1.	CRITERION 1: Costs of the certification process
1.1.	Minimization of the costs of taking and analyzing samples of the products
1.2.	Minimization of the control costs
1.3.	Minimization of general expenses (i.e. office)
2.	CRITERION 2: Customer satisfaction (benefits to the customer)
2.1.	Reduced "oppressiveness" of the control process
2.2.	Increased chances for certification
2.3.	Reduced costs incurred by the customer
3.	CRITERION 3: Reliability of the certification process
3.1.	Increased value of the "brand" of certification body
3.2.	Increased trust to certified products
3.3.	Minimization of costs of improper decisions
3.3.1.	Minimization of potential claims
3.3.2.	Minimization of the possibility to revoke the certificate
VARIANTS	
<i>Which variant of surveillance (control scenario) is more risky with respect to the above criteria / sub-criteria?</i>	
1.	VARIANT 1: Standard control plan (SCP)
2.	VARIANT 2: SCP + testing samples from production or SCP + additional audit
3.	VARIANT 3: SCP+ testing samples from production + additional audit

Source: own research.

Both models have the same alternative decisions available to trade-off in the process of surveillance. Short descriptions of these variants are provided in Table 3.

Table 3. Decision variants concerning the process of surveillance.

Decision variants		Description
Variant 1:	Standard control plan (SCP)	One physical inspection in the organic farming operator at the beginning of the certification process. There are no other planned actions during the 12 months of surveillance time. This decision variant is the cheapest from possible variants of surveillance that can be chosen by CB. Probability of noncompliance that exists in the organic farming operator is the highest.
Variant 2:	SCP + testing samples from production or SCP+ additional audit	One physical inspection in the organic farming operator at the beginning of the certification process, plus one additional inspection or laboratory analysis of the product samples.
Variant 3:	SCP+ testing samples from production + additional audit	One physical inspection in the organic farming operator at the beginning of the certification process and one additional inspection and testing of samples from production in laboratory. This decision variant is the most expensive from possible variants of surveillance that can be chosen by CB. Probability of noncompliance that exists in the organic farming operator is the lowest.

Source: own research.

4. RESEARCH DESCRIPTION AND RESULTS

The research was carried out in two main stages: (1) deriving general model of risk-benefit assessment; (2) deriving individual weights and B/R ratio. Stage 1 is the evaluation of criteria, subcriteria and variants in risk and benefit models and results in deriving general priorities (weights). In Stage 2, 1-5 scale points were assigned to each subcriteria

in the risk model and the individual B/R ratio was calculated for a selected producer. As both stages required expert judgments, data were collected in one of the organic farming CB operating at the Polish market. It is one of the nine authorized control bodies in organic farming that operate in Poland³⁸. It has more than 2,000 organic farming producers under its supervision. The organization also specializes in certification of other quality food schemes, such as protected designations of origin (PDO), protected geographical indications (PGI) and traditional specialty guaranteed (TSG) specified in the regulation (EU) no 1151/2012. The organization also has one accredited laboratory in the structure. A panel of five specialists, full time employees of this certification body, participated in this study. They have theoretical and practical knowledge and experience in auditing organic farmers and processors, and are involved in risk assessment on a daily basis. As the respondents expressed their judgments independently, results have been aggregated using the AIP approach (aggregating individual priorities). The procedure is required to calculate individual weights for each expert, and then to aggregate the results using arithmetic mean.

1.1. Stage 1. Deriving general (base) model of risk-benefit assessment

The AHP was used to weight the importance of the criteria and subcriteria in hierarchical models of risks (Tables 4 and 5) and benefits (Tables 6 and 7), and then the preference of each variant with respect to these criteria and subcriteria. Subsequently, the optimal variant appears as one fulfilling to the highest degree the most important criteria and the goal. The opinions were expressed by pairwise comparisons using the nine-point fundamental scale, for example, the experts answered the following questions:

- Which criterion is more important with respect to the goal (Goal = To identify the most risky or beneficial control scenario)?
- Which subcriterion is more important with respect to the relevant criterion?
- Which variant of surveillance (control scenario) is preferred with respect to the criteria/subcriteria?

Local priorities (weights) have been calculated using the matrix multiplications and a spreadsheet. All values shown in these tables represent numbers from all the experts aggregated by arithmetic mean. Normalized global weights of the subcriteria have been derived from multiplication of their local weights by the priority of the relevant criterion with respect to the goal. The grey column called Importance in Table 4 and 6 reflects the degree to which particular factors (criteria and subcriteria) apply to the customer (organic producer) who will be evaluated in stage 2 at the 5-point scale. In general model, all values in this column are equal to “1”, which can be translated as “neutral”. In individual model, the subsequent values of 2-5 are used to indicate the degree of importance of each factor with respect to a selected customer being the subject of risk assessment. Since Modified local (global) weights shown in the next columns are derived as multiplication of Importance by Local (global) weights, in general model both numbers are the same. Subsequently, global priorities for decision variants and B/R ratio indicate which control scenario is the most preferred in general, while in stage 2 they will specify which scenario is optimal for a selected customer.

Tables 4 and 5 present all priorities for risks (separate tables for criteria and variants to

³⁸ IJHAR-S, <http://www.ijhar-s.gov.pl/organic-farming.html>.

increase clarity). The results show that in general, the most risky control scenario is variant 1 – Standard Control Plan (SCP) ($W(R)V1=0,5625$), while variant 3 (SCP+ testing of samples from production + additional audit) appears to be of lowest risk ($W(R)V3=0,1845$). Another type of information that can be read from this table is the level of risk of particular factors (criteria and subcriteria) in the process of risk assessment. Parallel production of conventional products received the highest risk priority from all the criteria ($W(R)2=0,3025$). Under this risk, two subcriteria have been distinguished in the hierarchical model: having the same production line for organic and conventional products ($W(R)2.1$) and production of the same goods in organic and conventional versions ($W(R)2.2$). Both of them received the highest global priorities of all 28 subcriteria presented in the risk model ($W(R)2.1=0,1832$, $W(R)2.2=0,1193$). Such numbers indicate that these factors are of utmost importance in risk assessment procedure, as the risk of noncompliance is higher in companies with parallel production of conventional and organic goods.

Tables 6 and 7 shows general priorities for benefits (as above, individual tables for criteria and variants), while Table 8 compares risks (R) with benefits (B) and calculates the B/R ratio for decision variants. In terms of advantages, the differences between the three control variants were not as sharp as in case of risks. Variant 3 (with the lowest risk priority) received at the same time the highest weight for benefits ($W(B)V3=0,4183$), and consequently, the highest B/R ratio ($W(B/R)V3=2,2672$). As Table 6 provides information on benefits represented by particular factors, reliability of the certification process was indicated as the most favorable criterion, whose weight accounts for over 50% of the main goal ($W(B)3=0,5182$). Under this criterion, increased trust to certified products ($W(B)3.2$) and minimization of costs of improper decisions ($W(B)3.3$) appeared to have the greatest meaning, also in terms of the global weights ($W(B)3=0,2709$, $W(B)3.3=0,2910$).

Table 4. General priorities for criteria in the risk model.

Criteria	Codes	Local weights	Global weights normalized	Importance	Modified local weights	Modified local weights normalized	Modified global weights normalized
Type of organic products / processes	W(R)1	0.1512	0.1512	1	0.1512	0.1512	0.1512
Complexity of products	W(R)1.1	0.2560	0.0387	1	0.2560	0.2561	0.0387
High quantity of various ingredients used	W(R)1.1.1	0.2698	0.0104	1	0.2698	0.2697	0.0104
The use of non-organic products - annex IX	W(R)1.1.2	0.5552	0.0215	1	0.5552	0.5551	0.0215
The use of yeast and yeast products - annex VIII	W(R)1.1.3	0.1752	0.0068	1	0.1752	0.1752	0.0068
Number of suppliers of raw materials	W(R)1.2	0.0914	0.0138	1	0.0914	0.0914	0.0138
Annual production / value of products	W(R)1.3	0.0478	0.0072	1	0.0478	0.0478	0.0072
Number of production stages	W(R)1.4	0.1248	0.0189	1	0.1248	0.1248	0.0189
External origin of raw materials	W(R)1.5	0.1702	0.0257	1	0.1702	0.1702	0.0257
Participation of subcontractors in organic production	W(R)1.6	0.2354	0.0356	1	0.2354	0.2354	0.0356

Destination of products (recipients)	W(R)1.7	0.0742	0.0112	1	0.0742	0.0742	0.0112
Parallel production of conventional products	W(R)2	0.3025	0.3025	1	0.3025	0.3025	0.3025
The same production line for organic and conventional products	W(R)2.1	0.6056	0.1832	1	0.6056	0.6056	0.1832
Production of the same goods in organic and conventional versions	W(R)2.2	0.3944	0.1193	1	0.3944	0.3944	0.1193
Characteristics of enterprise	W(R)3	0.0683	0.0683	1	0.0683	0.0683	0.0683
Size of enterprise (number of employees)	W(R)3.1	0.1318	0.0090	1	0.1318	0.1319	0.0090
Number of departments	W(R)3.2	0.1382	0.0094	1	0.1382	0.1383	0.0094
Staff characteristics (knowledge, period of employment, etc.)	W(R)3.3	0.5348	0.0365	1	0.5348	0.5350	0.0365
Localization of enterprise (i.e. at own or others premises)	W(R)3.4	0.1948	0.0133	1	0.1948	0.1949	0.0133
Implemented and certified systems of quality management and food safety assurance	W(R)4	0.0555	0.0555	1	0.0555	0.0555	0.0555
Information about the producer	W(R)5	0.0966	0.0966	1	0.0966	0.0966	0.0966
Opinions about the producer (reputation)	W(R)5.1	0.0518	0.0050	1	0.0518	0.0518	0.005
Informal impressions about the previous cooperation	W(R)5.2	0.0704	0.0068	1	0.0704	0.0704	0.0068
Complaints and questions received	W(R)5.3	0.2194	0.0212	1	0.2194	0.2193	0.0212
Suspicion of fraud	W(R)5.4	0.3244	0.0313	1	0.3244	0.3242	0.0313
Failure to meet responsibilities	W(R)5.5	0.2454	0.0237	1	0.2454	0.2453	0.0237
Participation in the next stages of the food chain	W(R)5.6	0.0892	0.0086	1	0.0892	0.0891	0.0086
Experiences in certification of organic production	W(R)6	0.1164	0.1164	1	0.1164	0.1164	0.1164
New producers (no experience in certification)	W(R)6.1	0.1750	0.0204	1	0.1750	0.1750	0.0204
The so far changes of certification bodies	W(R)6.2	0.3190	0.0371	1	0.3190	0.3190	0.0371
Information about the producer from Agric. and Food Quality Insp.	W(R)6.3	0.5060	0.0589	1	0.5060	0.5060	0.0589
Results of the previous controls (audits)	W(R)7	0.2096	0.2096	1	0.2096	0.2096	0.2096
Number of the previous non-compliances	W(R)7.1	0.5140	0.1077	1	0.5140	0.5141	0.1078
Assessment of corrective and preventive actions	W(R)7.2	0.3832	0.0803	1	0.3832	0.3833	0.0803

Assessment of documentation of the quality management systems	W(R)7.3	0.1026	0.0215	1	0.1026	0.1026	0.0215
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Source: own research.

Table 5. General priorities for variants in the risk model.

Criteria	Local weights			Global weights		
	VAR. 1	VAR. 2	VAR. 3	VAR. 1	VAR. 2	VAR. 3
Type of organic products / processes						
Complexity of products						
High quantity of various ingredients used	0.6048	0.1697	0.2255	0.0063	0.0018	0.0023
The use of non-organic products - annex IX	0.5908	0.2429	0.1663	0.0127	0.0052	0.0036
The use of yeast and yeast products - annex VIII	0.5857	0.2487	0.1655	0.0040	0.0017	0.0011
Number of suppliers of raw materials	0.5851	0.2552	0.1596	0.0081	0.0035	0.0022
Annual production / value of products	0.3333	0.3333	0.3333	0.0024	0.0024	0.0024
Number of production stages	0.3333	0.3333	0.3333	0.0063	0.0063	0.0063
External origin of raw materials	0.5793	0.2555	0.1652	0.0149	0.0066	0.0042
Participation of subcontractors in organic production	0.5587	0.2702	0.1711	0.0199	0.0096	0.0061
Destination of products (recipients)	0.5209	0.2824	0.1966	0.0058	0.0032	0.0022
Parallel production of conventional products						
The same production line for organic and conventional products	0.6067	0.2422	0.1511	0.1111	0.0444	0.0277
Production of the same goods in organic and conventional versions	0.5982	0.2509	0.1509	0.0714	0.0299	0.0180
Characteristics of enterprise						
Size of enterprise (number of employees)	0.5443	0.2595	0.1962	0.0049	0.0023	0.0018
Number of departments	0.5152	0.2755	0.2093	0.0048	0.0026	0.0020
Staff characteristics (knowledge, period of employment, etc.)	0.5248	0.2744	0.2008	0.0192	0.0100	0.0073
Localization of enterprise (i.e. at own or others premises)	0.5708	0.2641	0.1651	0.0076	0.0035	0.0022
Implemented and certified systems of quality management and food safety assurance	0.3659	0.4091	0.2250	0.0203	0.0227	0.0125
Information about the producer						
Opinions about the producer (reputation)	0.4913	0.2455	0.2632	0.0025	0.0012	0.0013
Informal impressions about the previous cooperation	0.4914	0.2427	0.2659	0.0033	0.0017	0.0018

Complaints and questions received	0.5241	0.2283	0.2475	0.0111	0.0048	0.0052	
Suspicion of fraud	0.5295	0.2260	0.2446	0.0166	0.0071	0.0077	
Failure to meet responsibilities	0.5631	0.2027	0.2342	0.0133	0.0048	0.0056	
Participation in the next stages of the food chain	0.5699	0.2026	0.2275	0.0049	0.0017	0.0020	
Experiences in certification of organic production							
New producers (no experience in certification)	0.5551	0.2712	0.1737	0.0113	0.0055	0.0035	
The so far changes of certification bodies	0.5868	0.2481	0.1651	0.0218	0.0092	0.0061	
Information about the producer from Agric. and Food Quality Insp.	0.5992	0.2413	0.1595	0.0353	0.0142	0.0094	
Results of the previous controls (audits)							
Number of the previous non-compliances	0.6025	0.2435	0.1540	0.0649	0.0262	0.0166	
Assessment of corrective and preventive actions	0.5693	0.2018	0.2289	0.0457	0.0162	0.0184	
Assessment of documentation of the quality management systems	0.5631	0.2065	0.2304	0.0121	0.0044	0.0050	
				Codes:	0.5625	0.2527	0.1845
					W(R)V1	W(R)V2	W(R)V3

Source: own research.

Table 6. General priorities for criteria in the benefit model.

Criteria	Codes	Local weights	Global weights normalized	Importance	Modified local weights	Modified local weights normalized	Modified global weights normalized
Costs of the certification process	W(B)1	0.2410	0.241	1	0.2410	0.0803	0.0803
Minimization of the costs of taking and analyzing samples of the products	W(B)1.1	0.2602	0.0627	1	0.2602	0.2601	0.0627
Minimization of the control costs	W(B)1.2	0.3344	0.0806	1	0.3344	0.3343	0.0806
Minimization of general expenses (i.e. office)	W(B)1.3	0.4056	0.0977	1	0.4056	0.4055	0.0977
Customer satisfaction	W(B)2	0.2410	0.2410	1	0.2410	0.0803	0.0803
Reduced "oppressiveness" of the control process	W(B)2.1	0.2058	0.0496	1	0.2058	0.2059	0.0496
Increased chances for certification	W(B)2.2	0.2714	0.0654	1	0.2714	0.2715	0.0654
Reduced costs incurred by the customer	W(B)2.3	0.5224	0.1259	1	0.5224	0.5226	0.1259
Reliability of the certification process	W(B)3	0.5182	0.5182	1	0.5182	0.1727	0.1727
Increased value of the "brand" of certification body	W(B)3.1	0.1862	0.0965	1	0.1862	0.1862	0.0965

Criteria	Codes	Local weights	Global weights normalized	Importance	Modified local weights	Modified local weights normalized	Modified global weights normalized
Increased trust to certified products	W(B)3.2	0.5228	0.2709	1	0.5228	0.5228	0.2709
Minimization of costs of improper decisions	W(B)3.3	0.2910	0.1508	1	0.2910	0.291	0.1508
Minimization of potential claims	W(B)3.4	0.2033	0.0307	1	0.2033	0.2033	0.0307
Minimization of the possibility to revoke the certificate	W(B)3.5	0.7967	0.1201	1	0.7967	0.7967	0.1201

Source: own research.

Table 7. General priorities for variants in the benefit model.

Criteria	Local weights			Global weights		
	VAR. 1	VAR. 2	VAR. 3	VAR. 1	VAR. 2	VAR. 3
Costs of the certification process						
Minimization of the costs of taking and analyzing samples of the products	0.5612	0.2187	0.2201	0.0352	0.0137	0.0138
Minimization of the control costs	0.6081	0.1922	0.1997	0.0490	0.0155	0.0161
Minimization of general expenses (i.e. office)	0.6624	0.2369	0.1007	0.0647	0.0231	0.0098
Customer satisfaction						
Reduced "oppressiveness" of the control process	0.7448	0.1944	0.0608	0.0369	0.0096	0.0030
Increased chances for certification	0.4750	0.2047	0.3203	0.0311	0.0134	0.0209
Reduced costs incurred by the customer	0.5736	0.2137	0.2127	0.0722	0.0269	0.0268
Reliability of the certification process						
Increased value of the "brand" of certification body	0.1039	0.2690	0.6271	0.0100	0.0260	0.0605
Increased trust to certified products	0.1844	0.2173	0.5983	0.0500	0.0589	0.1621
Minimization of costs of improper decisions						
Minimization of potential claims	0.1157	0.2529	0.6315	0.0036	0.0078	0.0194
Minimization of the possibility to revoke the certificate	0.0619	0.2232	0.7150	0.0074	0.0268	0.0859
			Codes:	0.3601	0.2217	0.4183
				W(B)V1	W(B)V2	W(B)V3

Source: own research.

Table 8. B/R ratio for general model.

Risk/Benefit	Standard control plan (SCP)	SCP + testing of samples from production or SCP + additional audit	SCP+ testing of samples from production + additional audit
B	0.3601	0.2217	0.4183
R	0.5625	0.2527	0.1845
B/R	0.6402	0.8773	2.2672

Source: own research.

Checking consistency is a very important step of the AHP. The consistency report for risk and benefit criteria is provided in Table 9. As it was explained above, the consistency ratio (CR) proposed by Saaty³⁹ allows maximum inconsistency of 0.10 (10%). However, adopting such a strict level of acceptable inconsistency of pairwise judgments has been criticized as too rigorous⁴⁰. As consistency test is prepared for each pairwise comparison matrix and for each participant individually, the consistency report includes only the criteria. The results show satisfactory results of consistency test for majority of experts, except for the judgment of expert five in the risk model (CR=0.60), which has been excluded from the analysis. In benefit model, in case of two experts CR=0.28. Although it exceeded the acceptable level of CR=0.10, it was considered satisfactory due to large number of comparisons.

Table 9. B/R ratio for general model.

Respondents:	1	2	3	4	5
CR in Risk model:	0.11	0.12	0.21	0.11	0.60
CR in Benefit model:	0.00	0.08	0.28	0.13	0.28

Source: own research.

Stage 1 produces the base, “universal” results that can be applied for any organic producer being the potential client of the certification body. The priorities (weights) derived by the group of experts using the above hierarchical models and templates can be then “individualized” by indicating relevance of particular factors to the selected organic producer. This procedure is reported in stage 2.

1.2. Stage 1. Deriving individual model of risk-benefit assessment

In Stage 2, the relevance of surveillance criteria (and sub-criteria) is assessed for each client individually, using the 5-point scale from “1” – neutral, to “5” – high importance. In this study, only risk model was taken for individual analysis. It is justified by the fact that unlike risks, benefits are analyzed from the point of view of the certification company, with no relevance to the particular clients. However, as benefits influence the final decision, their scores have been taken from the general model. An employee of the certification body assessed the relevance of risks of one randomly chosen client. The client was a small fruit and vegetable processing company operating on a local market. The company started an organic farming production one year before the assessment with two organic

³⁹ Saaty T.L., *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation*, McGraw-Hill, 2nd edition, New York, 1980.

⁴⁰ Apostolou B., Hassel J.M., *An empirical examination of the sensitivity of the analytic hierarchy process to departures from recommended consistency ratios*, “Mathematical and Computer Modeling”, 4/5, 1993, pp. 163-170.

products: organic strawberry jam and fermented rye flour, which is used to produce soups. Organic farming production in this company has marginal importance comparing to conventional production. A majority of data needed to assess the relevance of risks was available in the certification body records. Missing data was mainly the ‘soft’ risk factors included in the risk model, such as staff characteristics, reputation of a producer, informal impressions about the previous cooperation, suspicion of fraud, and assessment of documentation of the quality management systems. Information about these factors has been provided by the experts, however, they stressed that in the process of implementation of the AHP risk-benefit models methods of recording such data needs to be further developed and standardized. Relevance of the risk factors and the new modified priorities for criteria and variants are shown in Table 10 and 11. Most risks have been judged as no relevant (neutral), causing no change in global weights. Risks of greatest relevance (“5”) to the organic producer include the same production line for organic and conventional products, staff characteristics, new producer with no experience in previous certification, and (scored as “4”) production of the same goods in organic and conventional versions.

Table 10. Individual priorities for criteria in the risk model.

Criteria	Codes	Local weights	Global weights normalized	Importance	Modified local weights	Modified local weights normalized	Modified global weights normalized
Type of organic products / processes	W(R)1	0.1512	0.1512	1	0.1512	0.1512	0.1512
Complexity of products	W(R)1.1	0.2560	0.0387	1	0.2560	0.1587	0.0240
High quantity of various ingredients used	W(R)1.1.1	0.2698	0.0104	2	0.5396	0.4249	0.0102
The use of non-organic products - annex IX	W(R)1.1.2	0.5552	0.0215	1	0.5552	0.4372	0.0105
The use of yeast and yeast products - annex VIII	W(R)1.1.3	0.1752	0.0068	1	0.1752	0.1380	0.0033
Number of suppliers of raw materials	W(R)1.2	0.0914	0.0138	1	0.0914	0.0567	0.0086
Annual production / value of products	W(R)1.3	0.0478	0.0072	1	0.0478	0.0296	0.0045
Number of production stages	W(R)1.4	0.1248	0.0189	2	0.2496	0.1547	0.0234
External origin of raw materials	W(R)1.5	0.1702	0.0257	3	0.5106	0.3165	0.0479
Participation of subcontractors in organic production	W(R)1.6	0.2354	0.0356	1	0.2354	0.1459	0.0221
Destination of products (recipients)	W(R)1.7	0.0742	0.0112	3	0.2226	0.1380	0.0209
Parallel production of conventional products	W(R)2	0.3025	0.3025	1	0.3025	0.3025	0.3025
The same production line for organic and conventional products	W(R)2.1	0.6056	0.1832	5	3.0280	0.6575	0.1989
Production of the same goods in organic and conventional versions	W(R)2.2	0.3944	0.1193	4	1.5776	0.3425	0.1036

Characteristics of enterprise	W(R)3	0.0683	0.0683	1	0.0683	0.0683	0.0683
Size of enterprise (number of employees)	W(R)3.1	0.1318	0.0090	2	0.2636	0.0806	0.0055
Number of departments	W(R)3.2	0.1382	0.0094	1	0.1382	0.0423	0.0029
Staff characteristics (knowledge, period of employment, etc.)	W(R)3.3	0.5348	0.0365	5	2.6740	0.8176	0.0558
Localization of enterprise (i.e. at own or others premises)	W(R)3.4	0.1948	0.0133	1	0.1948	0.0596	0.0041
Implemented and certified systems of quality management and food safety assurance	W(R)4	0.0555	0.0555	1	0.0555	0.0555	0.0555
Information about the producer	W(R)5	0.0966	0.0966	1	0.0966	0.0966	0.0966
Opinions about the producer (reputation)	W(R)5.1	0.0518	0.0050	2	0.1036	0.0984	0.0095
Informal impressions about the previous cooperation	W(R)5.2	0.0704	0.0068	1	0.0704	0.0669	0.0065
Complaints and questions received	W(R)5.3	0.2194	0.0212	1	0.2194	0.2085	0.0201
Suspicion of fraud	W(R)5.4	0.3244	0.0313	1	0.3244	0.3082	0.0298
Failure to meet responsibilities	W(R)5.5	0.2454	0.0237	1	0.2454	0.2332	0.0225
Participation in the next stages of the food chain	W(R)5.6	0.0892	0.0086	1	0.0892	0.0848	0.0082
Experiences in certification of organic production	W(R)6	0.1164	0.1164	1	0.1164	0.1164	0.1164
New producers (no experience in certification)	W(R)6.1	0.1750	0.0204	5	0.8750	0.5147	0.0599
The so far changes of certification bodies	W(R)6.2	0.3190	0.0371	1	0.3190	0.1876	0.0218
Information about the producer from Agric. and Food Quality Insp.	W(R)6.3	0.5060	0.0589	1	0.5060	0.2976	0.0346
Results of the previous controls (audits)	W(R)7	0.2096	0.2096	1	0.2096	0.2096	0.2096
Number of the previous non-compliances	W(R)7.1	0.5140	0.1077	2	1.0280	0.6791	0.1423
Assessment of corrective and preventive actions	W(R)7.2	0.3832	0.0803	1	0.3832	0.2531	0.0530
Assessment of documentation of the quality management systems	W(R)7.3	0.1026	0.0215	1	0.1026	0.0678	0.0142

Source: own research.

Table 11. Individual priorities for variants in the risk model.

Criteria	Local weights			Global weights		
	VAR. 1	VAR. 2	VAR. 3	VAR. 1	VAR. 2	VAR. 3
Type of organic products / processes						
Complexity of products						
High quantity of various ingredients used	0.6048	0.1697	0.2255	0.0062	0.0017	0.0023
The use of non-organic products - annex IX	0.5908	0.2429	0.1663	0.0062	0.0026	0.0017
The use of yeast and yeast products - annex VIII	0.5857	0.2487	0.1655	0.0019	0.0008	0.0005
Number of suppliers of raw materials	0.5851	0.2552	0.1596	0.0050	0.0022	0.0014
Annual production / value of products	0.3333	0.3333	0.3333	0.0015	0.0015	0.0015
Number of production stages	0.3333	0.3333	0.3333	0.0078	0.0078	0.0078
External origin of raw materials	0.5793	0.2555	0.1652	0.0277	0.0122	0.0079
Participation of subcontractors in organic production	0.5587	0.2702	0.1711	0.0123	0.0060	0.0038
Destination of products (recipients)	0.5209	0.2824	0.1966	0.0109	0.0059	0.0041
Parallel production of conventional products						
The same production line for organic and conventional products	0.6067	0.2422	0.1511	0.1207	0.0482	0.0301
Production of the same goods in organic and conventional versions	0.5982	0.2509	0.1509	0.0620	0.0260	0.0156
Characteristics of enterprise						
Size of enterprise (number of employees)	0.5443	0.2595	0.1962	0.0030	0.0014	0.0011
Number of departments	0.5152	0.2755	0.2093	0.0015	0.0008	0.0006
Staff characteristics (knowledge, period of employment, etc.)	0.5248	0.2744	0.2008	0.0293	0.0153	0.0112
Localization of enterprise (i.e. at own or others premises)	0.5708	0.2641	0.1651	0.0023	0.0011	0.0007
Implemented and certified systems of quality management and food safety assurance	0.3659	0.4091	0.2250	0.0203	0.0227	0.0125
Information about the producer						
Opinions about the producer (reputation)	0.4913	0.2455	0.2632	0.0047	0.0023	0.0025
Informal impressions about the previous cooperation	0.4914	0.2427	0.2659	0.0032	0.0016	0.0017
Complaints and questions received	0.5241	0.2283	0.2475	0.0105	0.0046	0.0050
Suspicion of fraud	0.5295	0.2260	0.2446	0.0158	0.0067	0.0073
Failure to meet responsibilities	0.5631	0.2027	0.2342	0.0127	0.0046	0.0053

Participation in the next stages of the food chain	0.5699	0.2026	0.2275	0.0047	0.0017	0.0019
Experiences in certification of organic production						
New producers (no experience in certification)	0.5551	0.2712	0.1737	0.0333	0.0162	0.0104
The so far changes of certification bodies	0.5868	0.2481	0.1651	0.0128	0.0054	0.0036
Information about the producer from Agric. and Food Quality Insp.	0.5992	0.2413	0.1595	0.0207	0.0083	0.0055
Results of the previous controls (audits)						
Number of the previous non-compliances	0.6025	0.2435	0.1540	0.0857	0.0347	0.0219
Assessment of corrective and preventive actions	0.5693	0.2018	0.2289	0.0302	0.0107	0.0121
Assessment of documentation of the quality management systems	0.5631	0.2065	0.2304	0.0080	0.0029	0.0033
				0.5609	0.2559	0.1833
				W(R)V1	W(R)V2	W(R)V3

Source: own research.

The final B/R ratio (Table 12) is therefore dependent on the results of stage 1 (general importance of risk and benefit factors and degree of their fulfillment by each variant of surveillance) and stage 2 (relevance of the risk factors to individual client). It shows that for this particular company, B/R ratio is the highest for variant 3 ($W(B/R)V3 = 0,9640$), as it was in general model, and indicates the optimal solution.

Table 12. B/R ratio for individual model.

Risk/Benefit	Standard control plan (SCP)	SCP + testing of samples from production or SCP + additional audit	SCP+ testing of samples from production + additional audit
B	0.3601	0.2217	0.4183
R	0.5609	0.2559	0.1833
B/R	0.6420	0.8664	2.2821

Source: own research.

5. CONCLUSION

In the market of organic food, consumer trust is an important issue, since consumers are not able to verify whether a product is an organic product, not even after consumption⁴¹. Consumers are forced to trust that the operating system to control is effective. Only few studies can be found questioning the trustworthiness of third-party certification and addressing the problems of auditor independence and objectiveness⁴². Despite the assumption that certification bodies act in good faith, the use of appropriate risk assessment tools is crucial to increase the effectiveness of inspections and consequently, raise the consumer

⁴¹ Janssen M., Hamm U., *Product labelling in the market for organic food: Consumer preferences and willingness-to-pay for different organic certification logos*, "Food Quality and Preference" 25 (2012), pp. 9-22.

⁴² Albersmeier F., Schulze H., Jahn G., Spiller A., *The reliability...*, op. cit., pp. 927-935.

trust. Although the regulations oblige the certification bodies to conduct risk assessment⁴³, there are no specific procedures provided on this issue.

The objective of the present study was to demonstrate a new approach to risk and benefit assessment of organic producers in the process of their certification. This approach is based on one of the decision support methods, the Analytic Hierarchy Process. The decision to be taken in this process is which variant of surveillance (control scenario) is optimal for a particular organic producer applying for the certification. Two hierarchical models, risk and benefit, have been developed by experts from one of the major certification bodies in Poland, experienced in certification of organic products. These models have been analyzed in two stages: (1) evaluation of criteria, subcriteria and variants in risk and benefit models, resulting in general (base) priorities; (2) indicating the relevance of the risk factors for a selected producer and deriving individual B/R ratio. General results obtained in stage 1 allow producing a universal, base model that can be applied for risk assessment of any organic producer in certification bodies. In turn, stage 2 demonstrates a simple way of individualization of the general model to the specific producer. The AHP method was selected as having several advantages, including simple and user-friendly software for deriving priorities and possibility to run risk-benefit assessment. Models and templates developed during the study respond to a real need of certification bodies. However, several conditions must be fulfilled before implementation of the proposed models and templates in practice. First, although the risk-benefit models have been developed based on the pertinent documents and discussions with the relevant experts, they should be adjusted to individual needs of a certification body, for example, some organizations adopt more severe criteria in certifying their clients, while some others are prone to certify without an in-depth verification.

The certification body described in this paper belongs to organizations that certify their clients very carefully, following a long and careful risk assessment. For the same reason, the models should be analyzed internally by the employees of the certification body, and the analysis should be repeated once in a while to record and analyze changes that happen over time. In addition, due to complexity of the proposed models, in most organizations, the application of risk-benefit assessment requires refinement of the quality management system.

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LITERATURA

- [1] Albersmeier F., Schulze H., Jahn G., Spiller A., *The reliability of third party certification in the food chain: from checklists to risk-oriented auditing*, "Food Control" 20(10), (2009), pp. 927-935.
- [2] Alphonse Ch., *Application of the Analytic Hierarchy Process in Agriculture in Developing Countries*, "Agricultural Systems" 53 (1997), pp. 97-112.
- [3] Apostolou B., Hassel J.M., *An empirical examination of the sensitivity of the analytic hierar-*

⁴³ EC, Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control (<http://eur-lex.europa.eu>); EC, Commission Implementing Regulation (EU) No 392/2013 of 29 April 2013 amending Regulation (EC) No 889/2008 as regards the control system for organic production (<http://eur-lex.europa.eu>).

- chy process to departures from recommended consistency ratios, "Mathematical and Computer Modeling", 4/5 (1993), pp. 163-170.
- [4] Beuchelt T.D., Zeller M., *Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers*, "Ecological Economics" 70 (2011), pp. 1316-1324.
- [5] Chavez M.D., Berentsen P.P.B.M., Oude Lansink A.G.J.M., *Assessment of criteria and farming activities for tobacco diversification using the Analytical Hierarchical Process (AHP) technique*, "Agricultural Systems" 111 (2012), pp. 53-62.
- [6] Demiryurek K., *Analysis of information systems and communication networks for organic and conventional hazelnut producers in the Samsun province of Turkey*, "Agricultural Systems" 103 (2010), pp. 444-452.
- [7] EC, Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91.
- [8] EC, Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control (<http://eur-lex.europa.eu>).
- [9] EC, 2009, Guidelines on official controls in the organic sector, 10 December, Draft 1., Directorate-general for agriculture and rural development (<http://eur-lex.europa.eu>).
- [10] EC, Commission Implementing Regulation (EU) No 392/2013 of 29 April 2013 amending Regulation (EC) No 889/2008 as regards the control system for organic production (<http://eur-lex.europa.eu>).
- [11] ec.europa.eu, http://ec.europa.eu/agriculture/organic/consumer-confidence/inspection-certification_en
- [12] Forman E., Peniwati K., *Aggregating individual judgments and priorities with the Analytic Hierarchy Process*, "European Journal of Operational Research" 108 (1998), pp. 165-169.
- [13] IJHAR-S, <http://www.ijhar-s.gov.pl/organic-farming.html>
- [14] ISO, ISO/IEC 17000:2004, Conformity assessment. Vocabulary and general principles (<https://law.resource.org>).
- [15] ISO, ISO/IEC Guide 67:2004 Conformity assessment. Fundamentals of product certification (<https://law.resource.org>).
- [16] Jahn G., Schramm M., Spiller A., *The Reliability of Certification: Quality Labels as a Consumer Policy Tool*, "Journal of Consumer Policy" 28 (2005), pp. 53-73.
- [17] Janssen M., Hamm U., *Product labelling in the market for organic food: Consumer preferences and willingness-to-pay for different organic certification logos*, "Food Quality and Preference" 25 (2012), pp. 9-22.
- [18] Karami E., *Appropriateness of farmers' adoption of irrigation methods: The application of the AHP model*, "Agricultural Systems" 87 (2006), pp. 101-119.
- [19] Kleemann L., Abdulai A., *Organic certification, agro-ecological practices and return on investment: Evidence from pineapple producers in Ghana*, "Ecological Economics" 93 (2013), pp. 330-341.
- [20] Konefal J., Hatanaka M., *Enacting third-party certification: A case study of science and politics in organic shrimp certification*, "Journal of Rural Studies" 27 (2011), pp. 125-133.
- [21] Lobley M., Butler A., Reed M., *The contribution of organic farming to rural development: An exploration of the socio-economic linkages of organic and non-organic farms in England*, "Land Use Policy" 26(3), (2009), pp. 723-735.
- [22] Prusak A., Stefanów P., *Badania nad właściwościami metody AHP (Operational features of the AHP method, in Polish)*, "Folia Oeconomica Cracoviensia" LII (2011), pp. 87-104.
- [23] Prusak A., Stefanów P., *AHP – analityczny proces hierarchiczny. Budowa i analiza modeli decyzyjnych krok po kroku*, wyd. 1, C.H. Beck, Warszawa 2014.
- [24] Saaty R., *Decision making in complex environments. The Analytic Network Process (ANP) for Dependence and Feedback including a Tutorial for the SuperDecisions Software and Portions of the Encyclicon of Applications*, 2002.

- [25] Saaty T.L., *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation*, McGraw-Hill, 2nd edition, New York, 1980.
- [26] Saaty T.L., *Decision Making with Dependence and Feedback. The Analytic Network Process*, second ed. RWS Publications, Pittsburgh, 2001.
- [27] Saaty T.L., *Fundamentals of Decision Making and Priority Theory with the Analytic Hierarchy Process*, Vol. VI of The AHP Series, Pittsburgh, 2006.
- [28] Saaty T.L., *Relative Measurement and Its Generalization in Decision Making. Why Pairwise Comparisons are Central in Mathematics for the Measurement of Intangible Factors*, *The Analytic Hierarchy/Network Process*, "Rev. R. Acad. Cien. Serie A. Mat.", 102(2), (2008), pp. 253-318.
- [29] Saaty T.L., *Decision Making for Leaders. The Analytic Hierarchy Process for Decisions in a Complex World*, RWS Publications, Pittsburgh, 2008.
- [30] Saaty T.L., Forman E.H., *The Hierarchon. A Dictionary of Hierarchies (Analytic Hierarchy Process)*, RWS Publications, Pittsburgh, 1992.
- [31] Uematsu H., Mishra A.K., *Organic farmers or conventional farmers: Where's the money?*, "Ecological Economics" 78 (2012), pp. 55-62.
- [32] Zorn A., Lippert Ch., Dabbert S., *Supervising a system of approved private control bodies for certification: The case of organic farming in Germany*, "Food Control" 25 (2012), pp. 525-532.
- [33] Zorn A., Lippert, Ch. Dabbert, S., *An analysis of the risks of non-compliance with the European organic standard: A categorical analysis of farm data from a German control body*, "Food Control" 30 (2013), pp. 692-699.

ZASTOSOWANIE ANALIZY RISK-BENEFIT AHP W CERTYFIKACJI ROLNICTWA EKOLOGICZNEGO

Celem badań jest opracowanie modeli oceny ryzyka i korzyści w oparciu o metodę analitycznego procesu hierarchicznego (AHP) i zastosowanie ich w procesie certyfikacji produktów ekologicznych. Norma ISO 65 /EN 45011 oraz Rozporządzenie (EC) nr 834/2007 zobowiązuje jednostki certyfikujące do przeprowadzenia oceny ryzyka w procesie certyfikacji. Jednak nie opracowano jak dotąd w tym zakresie jednolitej metodologii. Metoda AHP pozwala na dekompozycję złożonego problemu decyzyjnego i przedstawienie go w postaci struktury hierarchicznej, złożonej z celu, kryteriów oraz wariantów decyzyjnych. W omawianym przypadku zostały zbudowane dwa odrębne modele: korzyści i ryzyka, w oparciu o dostępne źródła literaturowe oraz na bazie konsultacji z kluczowymi ekspertami pracującymi w jednej z dziewięciu zewnętrznych jednostek certyfikujących w Polsce, specjalizujących się w certyfikacji produktów ekologicznych. Obydwa modele mają te same warianty decyzyjne uwzględniane w procesie certyfikacji. Wyniki pokazały, że największe ryzyko dla produkcji ekologicznej to Produkcja równoległa wyrobów konwencjonalnych. W modelu korzyści, najważniejsze okazały się zaufanie do wyrobów certyfikowanych oraz minimalizacja kosztów niewłaściwych decyzji. Modele AHP okazały się bardzo przydatne w ocenie korzyści-ryzyka producentów wyrobów ekologicznych. Pokazane zostało nowe podejście do oceny ryzyka. Należy jednak pamiętać, że wdrożenie tego modelu w praktyce wymaga spełnienia pewnych warunków, jak np. indywidualne potrzeby danej jednostki certyfikującej i dążenie do doskonalenia systemu zarządzania jakością.

Słowa kluczowe: AHP, certyfikacji, analizy ryzyka i korzyści, oceny ryzyka, rolnictwo ekologiczne, certyfikacji osób trzecich.

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BARRIERS TO KNOWLEDGE SHARING IN GLOBAL TEAMS – THEORETICAL PERSPECTIVE

Organizing work in teams has become the modus operandi in multinational organizations and team-based structures are becoming a regular occurrence in every day operation of the organization. The purpose of this study is to run an extensive literature review of knowledge sharing barriers in global teams. It is assumed that global teams are able to integrate specialized and globally dispersed capabilities, to understand local needs and demands and leverage cultural diversity. These multi-cultural teams also face a host of problems, and to better understand the challenges and benefits of team work for global organizations, it is vital to learn what are the potential barriers in knowledge sharing.

This paper is one of the series concerning knowledge sharing barriers. Companies increasingly rely on global teams to foster growth and innovation, yet too often these teams are assembled without a clear process to ensure success. Global teams represent a high stake commitment, so it is imperative that these teams have a proven framework to promote optimal functioning. Firms need to pay attention to potential barriers to knowledge sharing, in order for global teams to succeed. The relevance of the barriers to knowledge sharing has been identified and they are as such: absorptive capacity, relationship between members of different teams, time, common framework, the excessive value attributed to experts, lack of recognition, distance, time zone and cultural differences.

Keywords: knowledge sharing, global team, barriers to knowledge sharing

1. INTRODUCTION

Today organizations are faced with uncertainty and fast-changing environments, and work tasks are becoming increasingly complex. Moreover companies in response to customers scattered in different countries open their subsidiaries in different parts of the world. Employees will have to communicate with each other. As a natural response, organizations have adopted team-based work structures to respond to these challenges².

Because global teams are inherently diverse, differences and similarities should be acknowledged and harnessed as a source of innovation and new ideas. Global virtual teams are becoming the “new normal occurrence” as businesses expand across borders and as skill shortages force companies to tap into broader talent pools. Made possible by technology advances, the global virtual team offers many advantages, including³:

- obtaining an international perspective on business challenges and solutions;
- achieving economies of scale;

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² D. V. Day, P. Gronn, and E. Salas, E. (2006), “Leadership in team-based organizations: on the threshold of a new era”, *Leadership Quarterly*, Vol. 17 No. 3, pp. 211-216. F. P. Morgeson D. S. DeRue, and E. P. Karam, (2010a), “Leadership in teams: a functional approach to understanding leadership structures and processes”, *Journal of Management*, Vol. 36, pp. 5-39.

³ M. Derven, Four drivers to enhance global virtual teams, Vol. 48, No. 1, 2016, pp. 1-8.

- leveraging complementary work cycles that allow 24/7 productivity;
- harnessing best talent, wherever it is located;
- accelerating innovation and product launches;
- enhancing local knowledge and presence.

Companies increasingly rely on global virtual teams to foster growth and innovation, yet too often these teams are assembled without a clear process to ensure success. Global virtual teams represent a high stakes commitment, so it is imperative that these teams have a proven framework to promote optimal functioning.

The aim of this paper is to analyze the barriers to knowledge sharing in global teams⁴. This paper is one of the series concerning knowledge sharing barriers. The research has been undertaken which investigates global teams located in India, UK, Czech Republic and Poland. This paper undertakes an extensive literature review. Therefore the empirical results will be presented in another paper of this series.

The remainder of the paper will first deal with a literature review of knowledge sharing in global teams followed by analyzing barriers in knowledge sharing in global teams.

2. KNOWLEDGE SHARING WITHIN THE CONTEXT OF TEAM WORK

Teams are likely to become the primary vehicle through which internal and external knowledge is shared in a company. Given the distributed nature of team work communication and knowledge sharing across distance is also one of their biggest challenges. When teams become regular occurrence in the organization, knowledge sharing between and across teams and their various stakeholders becomes particularly important. Teams will need to:

- focus on their internal task,
- make sure they maintain relationships and interactions with their various stakeholders, whether company-internal or company-external; and
- become more outward-looking.

For the purpose of this paper, global teams are defined as those with professionals located in different countries with different cultures⁵.

To enable knowledge sharing in organizations, members must have access to an arena in which to engage in interpersonal dialogue to share their experiences and knowledge with one another. Work team interactions provide a context in which individuals can engage in such dialogue⁶, as they involve a group of individuals embedded in a larger social system who work interdependently to perform tasks⁷. By highlighting the social interdependence of team members, this definition accounts for the social-constructivist nature of knowledge construction and individual members' contributions toward a shared understanding⁸.

⁴ For the purpose of this paper the term global virtual team is used interchangeably with the term global team

⁵ E.F McDonough, K. B. Kahn and G. Barczak, G. (2001), "An investigation of the use of global, virtual, and collocated new product development teams", *The Journal of Product Innovation Management*, Vol. 18 No. 2, pp. 110-120.

⁶ T. E. J. Engström (2003), "Sharing knowledge through mentoring", *Performance Improvement*, Vol.42, pp.36-42.

⁷ R. A. Guzzo and M. W. Dickson (1996), "Teams in organizations: research on performance and effectiveness", *Annual Review of Psychology*, Vol. 47 No. 1, pp. 307-338

⁸ H. H. Tillema (2006), "Authenticity in knowledge-productive learning: what drives knowledge construction in collaborative inquiry?", *Human Resource Development International*, Vol.9 No.2, pp.173-190

It is assumed that global teams are able to integrate specialized and globally dispersed capabilities, to understand local needs and demands and leverage cultural diversity. These multi-cultural teams also face a host of problems, and to better understand the challenges and benefits of team work for global organizations, it is vital to learn what are the potential barriers in knowledge sharing.

Teams have an important role in knowledge sharing⁹. In the context of team work, previous studies provide evidence that knowledge sharing in teams leads to superior team performance in different work environments such as research and development¹⁰, new product development¹¹ and software development¹². Knowledge sharing among an organization's team members is critical for competitive advantage¹³. The literature suggests that the sharing of knowledge in team work settings succeed only if team members actively engage in knowledge sharing and by the efficient management of knowledge for the use by new teams with new projects¹⁴.

Scholars view knowledge sharing as an organizational innovation, which leads to the dissemination of innovative ideas that has the potential to improve work processes and to develop new business opportunities¹⁵.

Knowledge sharing is argued to lead to better performance due to improved decision making and better coordination¹⁶. In practice, however, knowledge sharing has proven challenging¹⁷. And if knowledge is not shared, the cognitive resources available within a

⁹ M. C. Becker, M.C. (2003), "What is the role of teams in knowledge management? Some indications from practice", *International Journal of Information Technology and Management*, Vol. 2 Nos 1/2, pp. 50-58.

¹⁰ H. Berends, H. van der Bij, K. Debackere and M. Weggeman (2006), "Knowledge sharing mechanisms in industrial research", *R&D Management*, Vol. 36 No. 1, pp. 85-95.

¹¹ P. Lee, N. Gillespie, L. Mann and A. Wearing (2010), "Leadership and trust: their effect on knowledge sharing and team performance", *Management Learning*, Vol. 41 No. 4, pp. 473-91.

¹² S. Faraj, and L. Sproull (2000), "Coordinating expertise in software development teams", *Management Science*, Vol. 46 No. 12, pp. 1554-68.

¹³ R. M. Grant (1996), "Toward a knowledge-based theory of the firm", *Strategic Management Journal*, Vol. 17, No. S2, pp. 109-122; L. A. Halawi, R. V. McCarthy and J. E. Aronson (2006), "Knowledge management and the competitive strategy of the firm", *The Learning Organization*, Vol. 13 No. 4, pp. 384-397; J. D. Pemberton and G. H. Stonehouse (2000), "Organisational learning and knowledge assets – an essential partnership", *The Learning Organization*, Vol. 7 No. 4, pp. 184-194.

¹⁴ Ibidem

¹⁵ C.P. Lin, (2008) "Clarifying the relationship between organizational citizenship behaviors, gender, and knowledge sharing in workplace organizations in Taiwan", *Journal of Business Psychology*, Vol. 22 No. 3, pp. 241-50. Lin, H-F. (2006), "Impact of organizational support on organizational intention to facilitate knowledge sharing", *Knowledge Management Research & Practice*, Vol. 4, pp. 26-35; I. Nonaka and H. Takeuchi (1995), *The Knowledge-creating Company: How Japanese Companies create the dynamics of innovation*, Oxford University Press, New York; J. Yi (2009), "A measure of knowledge sharing behavior: scale development and validation", *Knowledge Management Research & Practice*, Vol. 7, pp. 65-81.

¹⁶ C. Zarraga, and J. Bonache, J. (2003), "Assessing the team environment for knowledge sharing: an empirical analysis", *International Journal of Human Resource Management*, Vol. 14 No. 7, pp. 1227-45.

¹⁷ G. Szulanski (1996), "Exploring internal stickiness: impediments to the transfer of best practice within the firm", *Strategic Management Journal*, Vol. 17, pp. 27-44; L. Argote, P. Ingram, and J. M. Levine (2000), "Knowledge transfer in organizations: learning from the experience of others", *Organizational Behavior & Human Decision Processes*, Vol. 82 No. 1, pp. 1-9.

group remain underutilized¹⁸. This is particularly challenging in global teams where cultural and linguistic differences create barriers to communication and understanding.¹⁹

3. KNOWLEDGE SHARING BARRIERS

The use of global teams by firms has been boosted by the developments in technology that facilitate communication between team members located in different offices around the world, and it has quickly become a preferred option in high-tech firms²⁰. The author thinks that it does not only apply to high-tech companies. Nowadays it is almost impossible to imagine the operation of the company who does not use new communication technologies regardless the size or the branch it operates in. Developments in communication technology have led to the need to analyze the routines of work teams, in an attempt to understand what types of resources are necessary for work teams to be effective and collaborative, whether they are local or geographically distributed²¹. It is worth to remember that barriers to knowledge sharing may also occur in co-located teams.

Absorptive capacity is a barrier to knowledge sharing²². It is defined as a firm's ability to "identify, assimilate, and exploit knowledge from the environment"²³. AC is also regarded as a dynamic capability, i.e. a capability that can be used to configure, develop, and deploy the resources of the firm in order to achieve competitive advantages.

The relationship between employees from the organization especially between members of different teams turns out to be another barrier to knowledge transfer²⁴. Team members may not know personally and therefore they may have certain imagination of the person or even prejudices based on the style of writing an email, belonging to certain nation. Ignorance is due to the fact that those that have knowledge are not be visible, and those who need the knowledge do not know those who have it²⁵, which is classified as a

¹⁸ L. Argote, (1999), *Organizational Learning: Creating, Retaining, and Transferring Knowledge*, Kluwer Academic, Boston, MA;

¹⁹ D. C. Hambrick, S. C. Davison, S. A. Snell, and C. C. Snow (1998), "When groups consist of multiple nationalities", *Organization Studies*, Vol. 19 No. 2, pp. 181-206; M. A. Von Glinow, D. L. Shapiro, and J. M. Brett, J.M. (2004), "Can we talk, and should we? Managing emotional conflict in multicultural teams", *Academy of Management Review*, Vol. 29 No. 4, pp. 578-93.

²⁰ M. Monalisa, T. Daim, F. Miriani, P. Dash, R. Khamis and V. Bhusari (2008), "Managing global design teams", *Research-Technology Management*, Vol. 51 No. 4, pp. 48-59.

²¹ E. W. Coakes, J. M. Coakes, and D. Rosenberg, D. (2008), "Co-operative work practices and knowledge sharing issues: a comparison of viewpoints", *International Journal of Information Management*, Vol. 28 No. 1, pp. 12-25.

²² R. H. Assudani (2009), "Dispersed knowledge work – implications for knowledge intensive firms", *Journal of Knowledge Management*, Vol. 13 No. 8, pp. 521-532; A. Riege (2005), "Three-dozen knowledge sharing barriers managers must consider", *Journal of Knowledge Management*, Vol. 9 No. 3, pp. 18-35; M. Kyobe (2010), "A knowledge management approach to resolving the crises in the information systems discipline", *Journal of Systems and Information Technology*, Vol. 12 No. 2, pp. 161-173.

²³ W. M. Cohen and D. A. Levinthal (1990), "Absorptive capacity :a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35 No. 1, pp. 128-152.

²⁴ A. Riege (2005), "Three-dozen knowledge sharing barriers managers must consider", *Journal of Knowledge Management*, Vol. 9 No. 3, pp. 18-35.

²⁵ C. O'Dell and C. J. Grayson (1998), "If only we knew what we know: identification and transfer of internal best practices", *California Management Review*, Vol. 40 No. 3, pp. 154-174.

relationship barrier. It also known that the person we like we are more willing to share the knowledge we have.

Time is identified as a barrier²⁶. Employees, generally are overloaded with work, have difficulty finding the time to share knowledge with their colleagues. It is much easier to share the knowledge, best practices whilst being in the same office. Time is a scare resource, there are always things that need to be done.

Common framework - geographically dispersed team members may not have a common framework, which may hinder collaboration²⁷. It is being understood as the routines, ways how knowledge is shared including formal and informal ways. The existence of a framework that represents the effective knowledge dissemination is important for global team.

Organizational structure plays a significant role in the effective dissemination of knowledge. Boundryless organization seems to be the best solution in the process of knowledge sharing. Firms consisting of **silotype structures**, with people divided into offices, locations and divisions will certainly experience difficulty in transferring knowledge between the teams. Visible barriers between departments may hinder effective collaboration. Each department may focus on achieving their own objectives forgetting about the company goal. This is due to the fact that team members will tend to focus solely on achieving their goals and not concern themselves with the goals of the organization as a whole. According to Wastell²⁸ and Karlsen et al²⁹. This is the responsibility of managers to build a knowledge sharing culture. Such manager should be self-aware, curious and committed to building a team culture of mutual respect, and creates an environment in which new ideas are encouraged and explored. To be fully effective, global team managers need to be sensitive to cultural backgrounds and how such biases can influence the level of participation from team members.

The **excessive value attributed to experts** also interferes with effective knowledge transfer. In many cases employees believe that their future depends on their development as an expert, and so struggle to attain or maintain hegemony over knowledge instead of seeking to share it³⁰. Experts or consultants are perceived as those with capabilities and experience which may diminish other employees. Lack of recognition also interferes with the proper interaction between team members. The absence of recognition of employees who spend time learning, sharing and helping teams or members from outside their own scope eventually discourages them from continuing to do so³¹. The firms' strategic deci-

²⁶ A. Riege (2005), "Three-dozen knowledge sharing barriers managers must consider", *Journal of Knowledge Management*, Vol. 9 No. 3, pp. 18-35.

²⁷ R. H. Assudani (2009), "Dispersed knowledge work – implications for knowledge intensive firms", *Journal of Knowledge Management*, Vol. 13 No. 8, pp. 521-532.

²⁸ D G. Wastell (2001), "Barriers to effective knowledge management: action research meets grounded theory", *Journal of Systems and Information Technology*, Vol. 5 No. 1, pp. 21-36.

²⁹ J. T. Karlsen, L. Hagman and T. Pedersen (2011), "Intra-project transfer of knowledge in information systems development firms", *Journal of Systems and Information Technology*, Vol. 3 No. 1, pp. 66-80.

³⁰ M. Alavi and D. E. Leidner (2001), "Review: knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25 No. 1, pp. 107-137; N. Levina and E. Vaast (2008), "Innovation or doing as told? Status differences and overlapping boundaries in offshore collaboration", *MIS Quarterly*, Vol. 32 No. 2, pp. 307-332.

³¹ C. O'Dell and C. J. Grayson (1998), "If only we knew what we know: identification and transfer of internal best practices", *California Management Review*, Vol. 40 No. 3, pp. 154-174; L. J. Yao, T. H. Y. Kam and S.

sion to use global teams leads to some specific barriers such as distance, time zone and cultural differences.

Distance is cited by some authors as a barrier to knowledge dissemination as it reduces or totally excludes face-to-face interaction, and makes shared identity difficult to achieve³². Nothing will replace face to face contact even though nowadays companies have got a large It tools to have contact online with team members.

The fact that teams work in different **time zones** teams may be a barrier for knowledge sharing. It requires a greater need for explicit knowledge so that there is exchange of knowledge. According to the authors, in firms that have geographically distributed teams they use tools such as intranets, groupware and knowledge base. Cultural differences are pointed out as one of the reasons for the failure in offshore software development projects³³. Different countries have different ways of working that sometimes hinder interaction and cause conflicts between teams³⁴. **Cultural differences** are identified as one the greatest impediments to effective knowledge sharing³⁵. The reserved culture which is particular to some countries, such as China, could represent a barrier to knowledge sharing, as it could be interpreted as “showing off”³⁶.

The use of global teams by firms has benefits; on the other hand, knowledge sharing becomes more complex. Understanding the barriers to knowledge sharing in global teams may positively influence the achievement of offshore benefits.

4. CONCLUSION

New ways of working are required in today’s interconnected world, which reflects the changing realities of globalization, where collaboration and speed are paramount. The widespread adoption of team structures to organize and complete organizational tasks is one of the major changes in work and organizations that has occurred during the last 50 years. In 1959, when individual work characterized organizations, Peter Drucker predicted the movement toward team structures in future organizations along with the emergence of the “knowledge-worker,” a term he coined at the time. This paper has contributed to the growing body of literature on knowledge sharing barriers.

Firms need to pay attention to potential barriers to knowledge sharing, in order for global teams to succeed. The relevance of the barriers to knowledge sharing has been identified and they are a such: absorptive capacity, relationship between members of dif-

H. Chan (2007), “Knowledge sharing in Asian public administration sector: the case of Hong Kong”, *Journal of Enterprise Information Management*, Vol. 20 No. 1, pp. 51-69.

³² N. Levina and E. Vaast (2005), “The emergence of boundary spanning competence practice: implications for implementation and use of information systems”, *MIS Quarterly*, Vol. 29 No. 2, pp. 335-363; J. Kotlarsky, P. C. vanFenema, and L. Willcocks (2008), “Developing a knowledge-based perspective on coordination: the case of global software projects”, *Information & Management*, Vol. 45 No. 2, pp. 96-108.

³³ M. Alavi, and Leidner, D.E. (2001), “Review: knowledge management and knowledge management systems: conceptual foundations and research issues”, *MIS Quarterly*, Vol. 25 No. 1, pp. 107-137.

³⁴ S. Krishna, S. Sahay and G. Walsham (2004), “Managing cross-cultural issues in global software outsourcing”, *Communications of the ACM*, Vol. 47 No. 4, pp. 62-66.

³⁵ M. Alavi, and D. E. Leidner, (2001), “Review: knowledge management and knowledge management systems: conceptual foundations and research issues”, *MIS Quarterly*, Vol. 25 No. 1, pp. 107-137.

³⁶ L. J. Yao, T.H.Y. Kam and S.H. Chan (2007), “Knowledge sharing in Asian public administration sector: the case of Hong Kong”, *Journal of Enterprise Information Management*, Vol. 20 No. 1, pp. 51-69.

ferent teams, time, common framework, the excessive value attributed to experts, lack of recognition, distance, time zone and cultural differences.

This research offers a thorough analysis of potential barriers in knowledge sharing. The present research should encourage researchers to continue to examine further barriers and enablers in knowledge sharing.

LITERATURE

- [1] Alavi, M. and Leidner, D.E. (2001), "Review: knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol.25 No. 1, pp. 107-137.
- [2] Argote, L. (1999), *Organizational Learning: Creating, Retaining, and Transferring Knowledge*, Kluwer Academic, Boston, MA.
- [3] Argote, L., Ingram, P. and Levine, J.M. (2000), "Knowledge transfer in organizations: learning from the experience of others", *Organizational Behavior & Human Decision Processes*, Vol. 82 No. 1, pp. 1-9.
- [4] Assudani, R.H. (2009), "Dispersed knowledge work – implications for knowledge intensive firms", *Journal of Knowledge Management*, Vol. 13 No. 8, pp. 521-532.
- [5] Becker, M.C. (2003), "What is the role of teams in knowledge management? Some indications from practice", *International Journal of Information Technology and Management*, Vol. 2 Nos 1/2, pp. 50-58.
- [6] Berends, H., van der Bij, H., Debackere, K. and Weggeman, M. (2006), "Knowledge sharing mechanisms in industrial research", *R&D Management*, Vol. 36 No. 1, pp. 85-95.
- [7] Cabrera, E.F. and Cabrera, A. (2005), "Fostering knowledge sharing through people management practices", *International Journal of Human Resource Management*, Vol. 16 No. 5, pp. 720-36.
- [8] Coakes, E.W., Coakes, J.M. and Rosenberg, D. (2008), "Co-operative work practices and knowledge sharing issues: a comparison of viewpoints", *International Journal of Information Management*, Vol. 28 No. 1, pp. 12-25.
- [9] Cohen, W. M. and Levinthal D.A.(1990), "Absorptive capacity :a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35 No. 1, pp. 128-152.
- [10] Day, D.V., Gronn, P. and Salas, E. (2006), "Leadership in team-based organizations: on the threshold of a new era", *Leadership Quarterly*, Vol. 17 No. 3, pp. 211-216.
- [11] Derven, M., Four drivers to enhance global virtual teams, Vol. 48, No. 1, 2016, pp. 1-8.
- [12] Engström, T.E.J. (2003), "Sharing knowledge through mentoring", *Performance Improvement*, Vol.42,pp.36-42.
- [13] Faraj, S. and Sproull, L. (2000), "Coordinating expertise in software development teams", *Management Science*, Vol. 46 No. 12, pp. 1554-68.
- [14] Grant, R.M. (1996), "Toward a knowledge-based theory of the firm", *Strategic Management Journal*, Vol.17No.S2,pp.109-122.
- [15] Guzzo,R.A.andDickson,M.W.(1996),"Teamsinorganizations:recentresearchonperformance and effectiveness", *Annual Review of Psychology*, Vol. 47 No. 1, pp. 307-338
- [16] Halawi, L.A., McCarthy, R.V. and Aronson, J.E. (2006), "Knowledge management and the competitive strategy of the firm", *The Learning Organization*, Vol. 13 No. 4, pp. 384-397.
- [17] Hambrick, D.C., Davison, S.C., Snell, S.A. and Snow, C.C. (1998), "When groups consist of multiple nationalities", *Organization Studies*, Vol. 19 No. 2, pp. 181-206.
- [18] Karlsen, J.T., Hagman, L. and Pedersen, T. (2011), "Intra-project transfer of knowledge in information systems development firms", *Journal of Systems and Information Technology*, Vol. 3 No. 1, pp. 66-80.
- [19] Kotlarsky,J.,vanFenema,P.C.andWillcocks,L.(2008),"Developingaknowledge-basedperspective on coordination: the case of global software projects", *Information & Management*, Vol. 45 No. 2, pp. 96-108.

- [20] Krishna, S., Sahay, S. and Walsham, G. (2004), "Managing cross-cultural issues in global software outsourcing", *Communications of the ACM*, Vol. 47 No. 4, pp. 62-66.
- [21] Kyobe, M. (2010), "A knowledge management approach to resolving the crises in the information systems discipline", *Journal of Systems and Information Technology*, Vol. 12 No. 2, pp. 161-173.
- [22] Lee, P., Gillespie, N., Mann, L. and Wearing, A. (2010), "Leadership and trust: their effect on knowledge sharing and team performance", *Management Learning*, Vol. 41 No. 4, pp. 473-91.
- [23] Levina, N. and Vaast, E. (2005), "The emergence of boundary spanning competence practice: implications for implementation and use of information systems", *MIS Quarterly*, Vol. 29 No. 2, pp. 335-363.
- [24] Levina, N. and Vaast, E. (2008), "Innovation or doing as told? Status differences and overlapping boundaries in offshore collaboration", *MIS Quarterly*, Vol. 32 No. 2, pp. 307-332.
- [25] Lin, C-P. (2008), "Clarifying the relationship between organizational citizenship behaviors, gender, and knowledge sharing in workplace organizations in Taiwan", *Journal of Business Psychology*, Vol. 22 No. 3, pp. 241-50. Lin, H-F. (2006), "Impact of organizational support on organizational intention to facilitate knowledge sharing", *Knowledge Management Research & Practice*, Vol. 4, pp. 26-35.
- [26] McDonough, E.F. III, Kahn, K.B. and Barczak, G. (2001), "An investigation of the use of global, virtual, and collocated new product development teams", *The Journal of Product Innovation Management*, Vol. 18 No. 2, pp. 110-120.
- [27] Monalisa, M., Daim, T., Miriani, F., Dash, P., Khamis, R. and Bhusari, V. (2008), "Managing global design teams", *Research-Technology Management*, Vol. 51 No. 4, pp. 48-59.
- [28] Morgeson, F.P., DeRue, D.S. and Karam, E.P. (2010a), "Leadership in teams: a functional approach to understanding leadership structures and processes", *Journal of Management*, Vol. 36, pp. 5-39.
- [29] Nonaka, I. and Takeuchi, H. (1995), *The Knowledge-creating Company: How Japanese Companies create the dynamics of innovation*, Oxford University Press, New York.
- [30] O'Dell, C. and Grayson, C.J. (1998), "If only we knew what we know: identification and transfer of internal best practices", *California Management Review*, Vol. 40 No. 3, pp. 154-174.
- [31] Pemberton, J.D. and Stonehouse, G. H. (2000), "Organisational learning and knowledge assets – an essential partnership", *The Learning Organization*, Vol. 7 No. 4, pp. 184-194.
- [32] Riege, A. (2005), "Three-dozen knowledge sharing barriers managers must consider", *Journal of Knowledge Management*, Vol. 9 No. 3, pp. 18-35.
- [33] Szulanski, G. (1996), "Exploring internal stickiness: impediments to the transfer of best practice within the firm", *Strategic Management Journal*, Vol. 17, pp. 27-44.
- [34] Tillema, H.H. (2006), "Authenticity in knowledge-productive learning: what drives knowledge construction in collaborative inquiry?", *Human Resource Development International*, Vol. 9 No. 2, pp. 173-190
- [35] Von Glinow, M.A., Shapiro, D.L. and Brett, J.M. (2004), "Can we talk, and should we? Managing emotional conflict in multicultural teams", *Academy of Management Review*, Vol. 29 No. 4, pp. 578-93.
- [36] Yao, L.J., Kam, T.H.Y. and Chan, S.H. (2007), "Knowledge sharing in Asian public administration sector: the case of Hong Kong", *Journal of Enterprise Information Management*, Vol. 20 No. 1, pp. 51-69.
- [37] Yi, J. (2009), "A measure of knowledge sharing behavior: scale development and validation", *Knowledge Management Research & Practice*, Vol. 7, pp. 65-81.
- [38] Zarraga, C. and Bonache, J. (2003), "Assessing the team environment for knowledge sharing: an empirical analysis", *International Journal of Human Resource Management*, Vol. 14 No. 7, pp. 1227-45.

BARIERY DZIELENIA SIĘ WIEDZĄ W ZESPOŁACH GLOBALNYCH

Organizowanie pracy w zespołach stało się modus operandi w firmach międzynarodowych, dlatego zespoły pracownicze stają się zjawiskiem powszechnie występującym w każdym dziale przedsiębiorstwa. Zakłada się, że globalne zespoły są w stanie zintegrować specjalistyczne umiejętności rozproszone na całym świecie w celu zrozumienia potrzeb i wymagań lokalnych oraz wpływu różnorodności kulturowej. Te zespoły wielokulturowe również stają w obliczu wielu problemów i aby lepiej zrozumieć wyzwania i korzyści pracy zespołowej dla globalnych organizacji ważne jest aby dowiedzieć się, jakie są potencjalne bariery w dzieleniu się wiedzą. Celem niniejszej pracy jest zaprezentowanie przeglądu literatury przedmiotu w zakresie barier dzielenia się wiedzą w globalnych zespołach. Niniejszy artykuł jest jednym z serii prac poświęconych dzieleniu się wiedzą w zespołach globalnych. Firmy coraz częściej opierają się na globalnych zespołach, aby wspierać w ten sposób swój rozwój oraz innowacyjność, niestety często też zespoły te są powoływane bez wyraźnego ukierunkowania na cel. Globalne zespoły stanowią najwyższy poziom zaangażowania pracowników, więc konieczne jest, aby te zespoły posiadały sprawdzony sposób funkcjonowania. Firmy muszą zwracać uwagę na potencjalne bariery dla wymiany wiedzy, w celu osiągnięcia sukcesu przez nie. Znaczenie barier dla wymiany wiedzy zostało zidentyfikowane i są one następujące: zdolność do absorpcji, relacje między członkami różnych zespołów, czas, wspólne ramy, nadmierna wartość przypisana ekspertom, brak uznania, dystans, strefa czasowa oraz różnice kulturowe.

Słowa kluczowe: dzielenie się wiedzą, globalny zespół, bariery w dzieleniu się wiedzą

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7. Nie są przyjmowane recenzje niespełniające merytorycznych i formalnych wymagań.
8. Wstępnie zakwalifikowany przez redaktora naczelnego do wydania artykuł zostaje wysłany do recenzentów, którzy wypowiadają się na temat jego przyjęcia lub odrzucenia. Recenzenci mają prawo do powtórnej weryfikacji poprawionego tekstu.
9. W przypadkach spornych powoływani są dodatkowi recenzenci.
10. Uwagi recenzentów są przekazywane autorowi, który ma obowiązek poprawienia tekstu.
11. Ostateczną decyzję o zakwalifikowaniu lub odrzuceniu artykułu podejmuje redaktor naczelny czasopisma, zasięgając opinii członków Komitetu Redakcyjnego.
12. Kryteria kwalifikowania lub odrzucenia artykułu są zawarte w formularzu recenzji.
13. Formularz recenzji znajduje się na stronie internetowej Zeszytów Naukowych.
14. Nazwiska recenzentów współpracujących będą podawane raz w roku – w ostatnim numerze czasopisma, a także opublikowane na stronie internetowej czasopisma (nazwiska recenzentów poszczególnych publikacji lub numerów wydań czasopisma nie są ujawnione).
15. Szczegółowe informacje nt. recenzowania artykułów oraz przebiegu prac w redakcji czasopisma i Oficynie Wydawniczej są opisane w wytycznych dla autorów artykułów naukowych.

**Informacje dla autorów artykułów naukowych publikowanych
w Zeszytach Naukowych Politechniki Rzeszowskiej
zjawiska *ghostwriting* i *guest authorship***

Aby przeciwdziałać nierzetelności w nauce (*ghostwriting*, *guest authorship*), redakcje Zeszytów Naukowych Politechniki Rzeszowskiej prowadzą odpowiednie procedury charakterystyczne dla reprezentowanych dziedzin nauki i na bieżąco wdrażają podane rozwiązania:

1. Redakcja wymaga podania wkładu poszczególnych autorów w powstanie artykułu (z podaniem ich afiliacji i informacji, kto jest autorem koncepcji, założeń, badań itd.); główną odpowiedzialność ponosi autor zgłaszający artykuł.
2. Redakcja wyjaśnia autorom pojęcia *ghostwriting* i *guest authorship*, które są przejawem nierzetelności naukowej, a wszelkie wykryte przypadki tego typu działań ze strony autorów będą demaskowane, włącznie z powiadomieniem odpowiednich podmiotów (instytucje zatrudniające autorów, towarzystwa naukowe itp.).
3. Redakcja uzyskuje informacje o źródłach finansowania publikacji, wkładzie instytucji naukowo-badawczych i innych podmiotów (*financial disclosure*).
4. Redakcja będzie dokumentować wszelkie przejawy nierzetelności naukowej, zwłaszcza łamanie zasad etyki obowiązujących w nauce.

Z *ghostwriting* mamy do czynienia wówczas, gdy ktoś wniósł istotny wkład w powstanie artykułu, lecz ani jego udział jako jednego z autorów nie został ujawniony, ani nie wymieniono go w podziękowaniach zamieszczonych w publikacji.

Z *guest authorship* mamy do czynienia wówczas, gdy udział autora jest znikomy lub w ogóle nie miał miejsca, a jego nazwisko jest podane jako autora lub współautora.

Formularz recenzji / Review Sheet

Zeszyty Naukowe (HSS i MMR) / Scientific Papers (HSS and MMR)

Tytuł pracy/Title:

A Prosimy o odpowiedzi na następujące pytania
Please respond to the following questions

1. Czy tytuł pracy jest zgodny z jej treścią?
Does the title of the paper reflect the content sufficiently? Tak Nie
 Yes No
2. Czy podejmowane problemy są aktualne?
Are the discussed issues up-to-date? Tak Nie
 Yes No
3. Oryginalność pracy
Paper originality Max. 20 points
4. Realizacja założeń sformułowanych w celu pracy
Goals realization formulated in the paper objective Max. 20 points
5. Poprawność języka i stylu pracy
Language and style correctness Max. 20 points
6. Dobór literatury i wykorzystanych źródeł
Proper selection of literature and sources Max. 20 points
7. Poprawność wnioskowania i jego zasadność wynikająca z treści pracy
Correctness on drawing conclusions and its relevance resulted
from the paper content Max. 20 points
- Suma punktów:
- Total no. of points:
8. Czy praca powinna zostać opublikowana?
Is the paper suitable for publication?
 Tak/Yes
 Tak, ale po wprowadzeniu wyszczególnionych w punkcie 9. uwag
Yes, but after the remarks specified in point 9 are corrected
 Nie, ponieważ/No, because

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Dane podstawowe

1. Pole zadruku: 12,5 x 19 cm + 1 cm na numery stron
2. Marginesy: górny – 5,20 cm, dolny – 5,20 cm, lewy – 4,25 cm, prawy – 4,25 cm
3. Czcionka: Times New Roman 11 pkt
4. Edytor: Microsoft Word
5. Zapis tekstu: obustronnie wyjustowany, interlinia pojedyncza, wcięcie pierwszego wiersza 0,75 cm, nie należy zostawiać pustych wierszy między akapitami
6. Wszystkie kolumny artykułu powinny być w całości wypełnione; pierwsza strona nietypowa – zawiera nagłówek, nazwisko Autora (Autorów), tytuł artykułu, streszczenie i początek artykułu, kolejne strony zawierają dalszą część artykułu, w tym tabele (tablice), rysunki (ilustracje, fotografie, wykresy, schematy, mapy), literaturę i streszczenie
7. Należy wprowadzić automatyczne dzielenie wyrazów

Dane szczegółowe (układ artykułu)

1. Na pierwszej stronie (nieparzystej) należy umieścić nagłówek (do pobrania): 10 pkt, pismo grube
2. Na kolejnych stronach artykułu u góry należy umieścić paginę żywą: strona parzysta – numer strony do lewego marginesu, pismo podrzędne 10 pkt, inicjał imienia i nazwisko Autora (Autorów) do prawego marginesu, pismo podrzędne 10 pkt; strona nieparzysta – tytuł artykułu lub (w przypadku dłuższego tytułu) jego logiczny początek zakończony wielokropkiem, pismo podrzędne 10 pkt
3. W dalszym ciągu na pierwszej stronie należy umieścić pismem grubym (odstęp przed 42 pkt): imię (pismo podrzędne 10 pkt), nazwisko (wersaliki 10 pkt) Autora (Autorów)
4. Tytuł artykułu – wersaliki 15 pkt, pismo grube, do lewego marginesu (nie należy dzielić wyrazów w tytule), interlinia pojedyncza, odstęp przed 24 pkt, odstęp po 18 pkt
5. Streszczenie (w języku artykułu) – 200-250 słów, pismo podrzędne 9 pkt, wcięcie całości z lewej strony 2 cm, bez akapitu, interlinia pojedyncza, odstęp po 12 pkt
6. Słowa kluczowe – pismo podrzędne 9 pkt, bez akapitu, interlinia pojedyncza, odstęp po 24 pkt
7. Imię i nazwisko Autora do korespondencji oraz pozostałych Autorów, afiliacja, adresy pocztowe, numery telefonów, e-maile – na dole pierwszej strony, pod kreską, pismo podrzędne 9 pkt z odpowiednimi odnośnikami, odstęp przed 2 pkt
8. Śródtytuł 1. stopnia – pismo podrzędne 13 pkt, grube, do lewego marginesu, interlinia pojedyncza, odstęp przed 14 pkt, odstęp po 9 pkt
9. Tekst artykułu, a w nim tabele (tablice), materiał ilustracyjny, wzory oraz śródtytuły niższego stopnia

10. Śródtytuł 2. stopnia – pismo podrzędne 11,5 pkt, grube, do lewego marginesu, interlinia pojedyncza, odstęp przed 10 pkt, odstęp po 8 pkt
11. Śródtytuł 3. stopnia – pismo podrzędne 11 pkt, do lewego marginesu, interlinia pojedyncza, odstęp przed 8 pkt, odstęp po 6 pkt
12. Nagłówek Literatura – pismo podrzędne 11,5 pkt, grube, do lewego marginesu, odstęp przed 12 pkt, odstęp po 8 pkt
13. Spis literatury cytowanej – pismo podrzędne 10 pkt, interlinia pojedyncza, nie należy zostawiać pustych wierszy między pozycjami literatury, odstęp po 2 pkt
14. Tytuł artykułu w języku angielskim (lub polskim) – wersaliki 11 pkt, pismo grube, do lewego marginesu, interlinia pojedyncza, odstęp przed 20 pkt, odstęp po 12 pkt
15. Nagłówek Summary (lub Streszczenie) – pismo podrzędne 9 pkt, grube, odstępy między znakami rozstrzelone co 2 pkt, odstęp po 6 pkt
16. Streszczenie w języku angielskim (lub polskim) – 200-250 słów, pismo podrzędne 9 pkt, wcięcie pierwszego wiersza 0,75 cm, interlinia pojedyncza, odstęp po 12 pkt
17. Słowa kluczowe – pismo podrzędne 9 pkt, bez akapitu, interlinia pojedyncza
18. Numer identyfikacyjny DOI – pismo podrzędne 9 pkt, bez akapitu
19. Terminy przesłania artykułu do redakcji i przyjęcia do druku – pismo podrzędne 9 pkt, kursywa, bez akapitu, interlinia pojedyncza

Rozmieszczenie rysunków (ilustracji, fotografii, map, wykresów, schematów)

1. Materiał ilustracyjny należy umieszczać możliwie jak najbliżej miejsca jego powołania
2. Nie należy przekraczać pola zadruku (12,5 x 19 cm), w którym musi się zmieścić i materiał ilustracyjny, i podpis
3. Większe rysunki (i inny materiał ilustracyjny) wraz z podpisem powinny zajmować całe pole zadruku, mniejsze zaś należy przesunąć odpowiednio – do lewego marginesu (na stronach parzystych), do prawego marginesu (na stronach nieparzystych)
4. Podpis w dwóch językach: w języku artykułu i w języku angielskim, należy umieścić pod rysunkiem (i innym materiałem ilustracyjnym), w jego ramach, bez kropki na końcu (jeśli jest to materiał zapożyczony, należy podać źródło), pismo podrzędne 9 pkt
5. Odstęp między materiałem ilustracyjnym a podpisem – 9 pkt, interlinia pojedyncza, odstęp między podpisami 4 pkt, odstęp po 14 pkt
6. Opis słowny na rysunkach należy ograniczyć do minimum, zastępując go liczbami arabskimi, a objaśnienia przenieść do podpisu – można użyć mniejszej czcionki (8 pkt)
7. Materiał ilustracyjny powinien mieć dobrą jakość, należy ujednoczyć formę i opisy w całym artykule (pismo podrzędne proste, od małej litery, maks. 9, min. 6 pkt w zależności od wielkości rysunku)
8. Materiał ilustracyjny należy ponumerować kolejno w ramach artykułu

9. Jeżeli w artykule występują różne rodzaje materiału ilustracyjnego, każdemu z nich należy nadać odrębną, ciągłą numerację
10. Materiał ilustracyjny należy przygotować w odcieniach czarno-szarych (do 20% czerni), ponieważ przy wydruku czarno-białym kolorowe rysunki są słabo lub całkowicie niereprodukowalne
11. Rysunki do druku kolorowego (za zgodą redaktora naczelnego czasopisma) należy przygotować w plikach .tif, .jpg

Rozmieszczenie tabel (tablic)

Tabela – zestawienie tekstów i liczb bądź samych liczb uszeregowanych w kolumny i wiersze

Tablica – zestawienie tekstów i liczb wzbogacone dodatkowo elementami graficznymi lub kolorystycznymi (niekiedy stanowią je tylko ilustracje)

1. Tabele (tablice) należy umieszczać możliwie jak najbliżej miejsca ich powołania
2. Nie należy przekraczać pola zadruku (12,5 x 19 cm)
3. Większe tabele (tablice) włącznie z tytułem zajmują całe pole zadruku, mniejsze zaś należy przesunąć odpowiednio – do lewego marginesu (na stronach parzystych), do prawego marginesu (na stronach nieparzystych)
4. Nad tabelą (tablicą) należy umieścić tytuł w dwóch językach: w języku artykułu i w języku angielskim. Tytuł rozpoczyna się całym słowem tabela (tablica)/table i umieszcza nad nią, w jej ramach, bez kropki na końcu; pismo podrzędne 9 pkt, interlinia pojedyncza; jeżeli tabela (tablica) jest zapożyczona, należy podać źródło
5. Odstęp przed tytułem tabeli (tablicy) 12 pkt, odstęp między tytułami 4 pkt, odstęp między tytułem a tabelą (tablicą) 8 pkt
6. Legenda po tabeli (tablicy) – odstęp od tabeli (tablicy) 6 pkt, interlinia pojedyncza, odstęp po 14 pkt
7. Teksty w główce tabeli (tablicy), tj. w górnej, wydzielonej części tabeli (tablicy), objaśniające treść kolumn zapisuje się pismem grubym, rozpoczynając od dużej litery, teksty w boczku tabeli, tj. w bocznej, wydzielonej części tabeli, objaśniające treść wierszy rozpoczyna się dużymi literami – teksty w pozostałych rubrykach składa się małymi literami
8. Tabele (tablice) należy numerować kolejno w ramach artykułu. W przypadku występowania i tabel, i tablic należy nadać im odrębną, ciągłą numerację
9. Jeżeli tabela (tablica) nie mieści się w jednym polu zadruku, można ją podzielić i przenieść na następną stronę czy strony – wówczas nad wszystkimi częściami tabeli (tablicy) należy powtórzyć jej numer i tytuł, ze skrótem (cd.)
12. Tabele (tablice) należy przygotować w odcieniach czarno-szarych (do 20% czerni), ponieważ przy wydruku czarno-białym kolorowe tabele (tablice) są słabo lub całkowicie niereprodukowalne
13. Tabele (tablice) do druku kolorowego (za zgodą redaktora naczelnego czasopisma) należy przygotować w plikach .tif, .jpg

Rozmieszczenie wzorów

1. Wzory należy umieszczać z lewej strony, z wcięciem 0,75 cm, pismo proste 11 pkt, wartości indeksów i potęg 7 pkt
2. Numery wzorów należy umieszczać w nawiasach okrągłych, wyrównując do prawego marginesu, pismo proste 11 pkt
3. Wzory powinny być opatrzone objaśnieniem występujących w nich elementów
4. Wzory, do których są odniesienia w tekście, należy numerować kolejno w ramach artykułu
5. Dłuższe wzory można dzielić na znakach relacji lub działania – znak, na którym się przenosi wzór, należy pozostawić na końcu pierwszego wiersza
6. Przed wzorem i po nim należy zachować odstęp 10 pkt

Rozmieszczenie spisu literatury

1. Spis literatury umieszcza się za treścią artykułu, w kolejności alfabetycznej nazwisk autorów
2. Powołania na literaturę należy zapisywać w tekście w nawiasie kwadratowym
3. W spisie literatury należy umieścić wyłącznie te publikacje, które są powoływane w tekście

PRZYKŁADY:

Książki

Lewandowski W.M.: Proekologiczne źródła energii odnawialnej, Wydawnictwa Naukowo-Techniczne, Warszawa 2002.

Czasopisma

Pietrucha K.: Analiza czasu odnowy i naprawy podsystemu dystrybucji wody dla miasta Rzeszowa, Instal, nr 10, 2008, s. 113-115.

Dokumenty elektroniczne

Zanotti G., Guerra C.: Is tensegrity a unifying concept of protein folds? FEBS Letters, vol. 534, no. 1-3, 2003, pp. 7-10, <http://www.sciencedirect.com> (dostęp: 8 czerwca 2011 r.).

Rozmieszczenie streszczenia

1. Po literaturze umieszcza się tytuł artykułu, nagłówek Summary i streszczenie w języku angielskim
2. Gdy artykuł jest w języku angielskim, na początku należy umieścić streszczenie w języku angielskim, a na końcu w języku polskim
3. Gdy artykuł jest w innym języku kongresowym, na początku należy umieścić streszczenie w języku artykułu, a na końcu w języku angielskim
4. Po streszczeniu umieszcza się słowa kluczowe w tym samym języku co streszczenie

Rozmieszczenie numeru identyfikacyjnego i informacji dodatkowych

1. Po słowach kluczowych należy umieścić numer identyfikacyjny DOI
2. Pod numerem identyfikacyjnym zamieszcza się terminy przesłania artykułu do redakcji i przyjęcia do druku

Inne uwagi

1. W artykule można stosować wyliczenia – elementy wyliczeń należy oznaczać w całym artykule w sposób jednolity, np. za pomocą cyfr arabskich z kropką lub małych liter z nawiasem
2. W artykule należy stosować ogólnie przyjęte skróty, ale zdanie nie może się zaczynać od skrótu – należy go wówczas rozwinąć lub przeredagować zdanie
3. W artykułach każdy cytat musi być opatrzony informacją bibliograficzną (w formie przypisu na dole strony lub odwołania do spisu literatury)
4. Przypisy (pismo podrzędne 9 pkt) należy zapisywać w sposób jednolity w całym artykule, opatrując je odnośnikami gwiazdkowymi (gdy jest ich niewiele) lub liczbowymi, przyjmując ciągłą numerację w całym artykule i umieszczając każdy przypis od nowego akapitu

PRZYKŁADY:

- ¹ M. Hereźniak, *Kreowanie marki narodowej – rola idei przewodniej na przykładzie projektu „Marka dla Polski”*, [w:] H. Szulce, M. Florek, *Marketing terytorialny – możliwości aplikacji, kierunki rozwoju*, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2005, s. 344-345.
 - ² L. Witek, *Wpływ ekologicznych funkcji opakowań na postawy rynkowe konsumentów*, *Opakowanie*, nr 5, 2006, s. 12-17.
 - ³ J. Strojny, *Zmiany gospodarcze i społeczne w integrującej się Europie*, *Zeszyty Naukowe Politechniki Rzeszowskiej*, nr 225, *Zarządzanie i Marketing*, z. 5, 2006, s. 45-50.
5. Nie należy pozostawiać na końcu wiersza tytułów znajdujących się przed nazwiskiem, inicjału imienia, spójników, cyfr arabskich i rzymskich
 6. Należy stosować wyłącznie legalne jednostki miar

Zachęcamy Autorów do zapoznania się z archiwum artykułów naukowych zawartych w Zeszytach Naukowych Politechniki Rzeszowskiej oraz do wykorzystania ich w bibliografii swojego artykułu.

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