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Spis treści

Od Redakcji

Szanowni Czytelnicy!

Przekazujemy Wam 27. numer „Zeszytów Naukowych Politechniki Częstochowskiej. Zarządzanie" t. 2, który zawiera 20 artykułów wyłącznie w języku angielskim. Problematyka tekstów dotyczy przede wszystkim realizacji zagadnień wynikających z badań statutowych realizowanych przez pracowników Wydziału Zarządzania Politechniki Częstochowskiej oraz naukowców z innych jednostek zewnętrznych.

Zawarte w niniejszym „Zeszycie Naukowym" artykuły w wielu przypadkach stanowią rezultat współpracy z krajowymi i zagranicznymi jednostkami naukowo-dydaktycznymi, w ramach której realizowane są różnorodne projekty badawcze. Na podkreślenie w tym obszarze zasługują badania podjęte z uczonymi ze Słowenii, które zaowocowały artykułami z tego kraju pojawiającymi się po raz pierwszy na łamach naszego czasopisma. Mamy nadzieję, że rozszerzenie współpracy badawczej zaprocentuje powstaniem nowych pól badań, w których uczestniczyć będą naukowcy z wielu różnych krajów.

Tematyka podejmowana w „Zeszycie Naukowym" nr 27 koncentr-uje się na szerokim spektrum zagadnień zarządzania, w tym problemów badawczych z obszaru logistyki, finansów i przedsiębiorczości.

Maria Nowicka-Skowron
Joanna Nowakowska-Grunt

From Editors

Dear Readers!

We announce the 27th issue of the "Scientific Journal of the Czestochowa University of Technology. Management" Vol. 2, which contains 20 articles exclusively in English. The issue of articles mainly concerns the implementation of ideas arising from statutory research carried out by the employees of the Faculty of Management at the Czestochowa University of Technology and scientists from other external academic units.

The articles in the "Scientific Journal" in many cases are the result of cooperation with national and foreign scientific and didactic units, within which various research projects are carried out. It is worth emphasizing the research undertaken by scholars from Slovenia, resulting in articles from this country appearing for the first time in our journal. We hope that the extension of research cooperation will result in new research fields in which scientists from many different countries will participate.

The topics discussed in the "Scientific Journal" No. 27 focus on a broad spectrum of management issues, including research problems in the area of logistics, finance, and entrepreneurship.

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STUDENT PERSPECTIVE OF PRACTICAL TRAINING AND WORK EXPERIENCE IN THE LOGISTICS PROFESSION

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Abstract: Looking for a job in the logistics profession depends very often on whether the jobseeker has the right practice and experience. Students entering the labour market are aware of this. At the same time, they also have clear views on the opportunities and areas where internships are important. The aim of this paper is to attempt to address the question how students perceive the issue of internship/practical training in a profession as a work experience in a company in the field of logistics and the role of internship in "conquering" the labour market. The article is the second of two parts of the study which aims to identify how students of Logistics perceive student internship and apprenticeship as broadly understood work experience in an enterprise.

Keywords: practice in the logistics profession, experience in logistics, student vision of the profession

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Introduction

Logistics is a term describing activities related to the process of planning, implementing and controlling of the efficient and effective flow of raw materials, production materials and finished products to meet customer requirements (Nowicka-Skowron 2001). Logistician must be able to perform a detailed analysis of the processes which take place in the enterprise (Nowosielski 2008), while at the same time to realize a synthesis and coordination with the processes carried out by the suppliers and customers. The logistics specialist should have managerial knowledge in planning, organizing and controlling, as well as should know the basic technical aspects of the mechanics and automation of production and warehouse processes. The logistics specialist should be able to work together in a team and also solve the problems independently and make decisions. Logistics experts are sought in production and commercial companies (Lichtarski 2015; Nogalski, Ronkowski 2007), shipping companies, transportation enterprises (Nowakowska-Grunt 2010), consulting companies and administrative offices. In a word, everywhere where the flow of goods is ordered.

In addition to education and other 21st century competencies (OECD 2003), from future logistics professionals more and more often practice is required. The current situation within the labor market, especially for young logisticians looking for the first job, is not easy. There are many recent graduates in the market, and

employers are most often looking for people with professional experience, so it is worthwhile to think about the practice during the studies.

Practice is the key to getting a job in this area. It is characterised above all by the phenomenon of globalisation, and consequently by increased competition (Skowron-Grabowska, Mesjasz-Lech 2016, p. 22), intensifying the processing and collection of data (Nowakowska-Grunt, Sałek, Strzelczyk 2017, p. 131), complicating relations in the supply chains (Surowiec 2016, p. 215) and creating supply networks (Świerczek 2007, p. 174). This requires new competences from the logistics staff (Kisperska-Moroń 2010, p. 21).

Aim of the study

The aim of this paper is to attempt to address the question how students perceive the issue of internship/practical training in a profession as a work experience in a company in the field of logistics and the role of internship in "conquering" the labour market. The article is the second of two parts of the study which aims to identify how students of Logistics perceive student internship and apprenticeship as broadly understood work experience in an enterprise.

The logisticians entering the labour market from the employers' perspective

The dynamic development of trade in Poland after 1989 influenced the conditions for the development of the logistic sector, which quite quickly matched the western standards. The logistics profession has gained immense popularity, and universities in Poland have opened education courses in this field. Logistics was a very desirable employee, and for this reason, this profession was included in the Forbes ranking of the best profession of the year at the high 6th position in 2013 (Młynarczyk 2013).

Unfortunately, as the results of the survey "Labor Market Barometer", commissioned annually by Work Service, show that nearly 37 percent of employers are not satisfied with the skills of graduates entering the labor market. Half of the firms' representatives believe that the qualifications of graduates are rather appropriate and only 6% find them definitely appropriate. The question of what is lacking in educational traineeship, the entrepreneurs point to the main shortcomings: lack of practical skills (93%), lack of experience (78%) (Work Service 2017).

The proper guidance for graduates seems to be to present a proactive attitude and engage in job search and job market research. According to S. Gołuchowska from the Raben Group, "after the end of education comes disappointment. Without the practice for the logistics profession, the chances of work in a good company are low. With only a diploma in the pocket, the graduate has a very weak position on the labor market, because the employer most commonly look for candidates with education and practice" (Trochymiak 2012).

According to the employers, the situation of graduates of Polish universities has been leaving much to be desired. One of the main reasons for high unemployment among graduates is incompatibility of the acquired education to the needs of the labor market in the region. Many young people while choosing a course of study do not consider if they get a job and the reason for entering the path of study is to develop their own concerns, but also to follow the fashion or choose the easiest way to obtain a diploma. The second major reason for not employing young people after graduation is the lack of professional experience (Raczyńska, Stachowska 2014).

Similar findings were presented at in the conference "University for the region – region for students", which main purpose was to analyze the Silesian labor market, as well as discuss the situation of the graduate. According to the research carried out on a group of 350 employers in the Silesian Voivodeship, the decisive factor in getting a job is not the grade on the diploma, but above all the previous contact with the business practice. As indicated by employers, among university graduates there is a lack of knowledge and practical skills. At the same time, more than two thirds of employers believe that the biggest barrier to finding a good employee is lack of experience of potential candidates (Urbanke 2017).

Changes in the labor market confirm data published by the Central Statistical Office in July 2017 (GUS 2017). The unemployment rate at the end of June 2017 was 7.1% and was the lowest in 8 years. Positive data also refer to youth unemployment, which in both groups 15-24 and 25-34 were the lowest for a few years (12.3%, 27.8% respectively). The biggest challenge for employers engaging young people will be the difference between the expectations and the competences of new employees entering the market. Human resources managers will have to change their approach to the internships and practices, and treat them as long-term investments, strategic for the future of the company (Romanowska 2010). Then they will be able to guarantee stable employment, reduce recruitment costs, and avoid the extra bonus associated with the need to involve employees under time pressure.

The practice of the last few years provides examples supporting the thesis that, regardless of the educational offer of the universities and the institutional relationship of the particular academic environment with the business environment, the study period provides an excellent opportunity for active and entrepreneurial students to develop their skills and gain new experiences and competences desirable in the labor market. Also from the activity of the student environment, which has a wide range of possibilities, depends on the student's acquisition of the desirable characteristics of the employers, as well as the building of other forms of relations with the labor market. They should be indicated as below (*Start na rynku pracy …*, 2017):

- job fairs,
- practices and internships,
- organization of competitions with employers and their companies,
- academic business incubators and technology transfer centers,

- other forms of interaction with employers' and entrepreneurs' organizations (e.g. academic business clubs, students branch offices of professional organizations, students economic forums),
- activities of non-governmental organizations in the form of associations and foundations supporting the professional development of students.

Study sample and methodology

The material for this analysis was provided by a survey carried out specifically for this study and it included 64 students of the last - 2nd year of Master's degree course in Logistics (Survey 2). A detailed description of the study sample is presented in Part One of this paper. The survey comprised 18 questions. The method of semantic differential and Likert scale were used for most questions; however, a few open questions were also included in the survey. This part of the paper presents the results related to apprenticeship.

Analysis of survey results and discussion

In the first question of the part concerning apprenticeship, the respondents stated how important it is to gain experience in logistics before entering the labour market in this particular branch of industry. The answers were marked on a semantic scale (0 - insignificant, 3 - moderately significant, 6 - of great significance). The respondents determined the importance of doing an apprenticeship in logistics at 5.06, which means that they consider apprenticeship in this profession to be extremely important. In fact, hands-on experience plays an important role in logistics on the labour market. In job offers, experience is a prerequisite in many cases, and according to a widely held opinion it is almost indispensable in this profession. Therefore, the students can be considered to have correctly recognized the labour market in this respect.

Subsequently, the respondents were asked to determine how important apprenticeship is in the given area. By means of a positional scale in the question related to this issue the students were asked whether apprenticeship in this area was very important, important, of medium importance, of little importance or of minor importance. The semantic descriptions were then assigned weights from 4 to 0 (4 for the most important and 0 for the least important). The replies to the question about the areas where, according to the respondents, apprenticeship is important are presented in *Figure 1*.

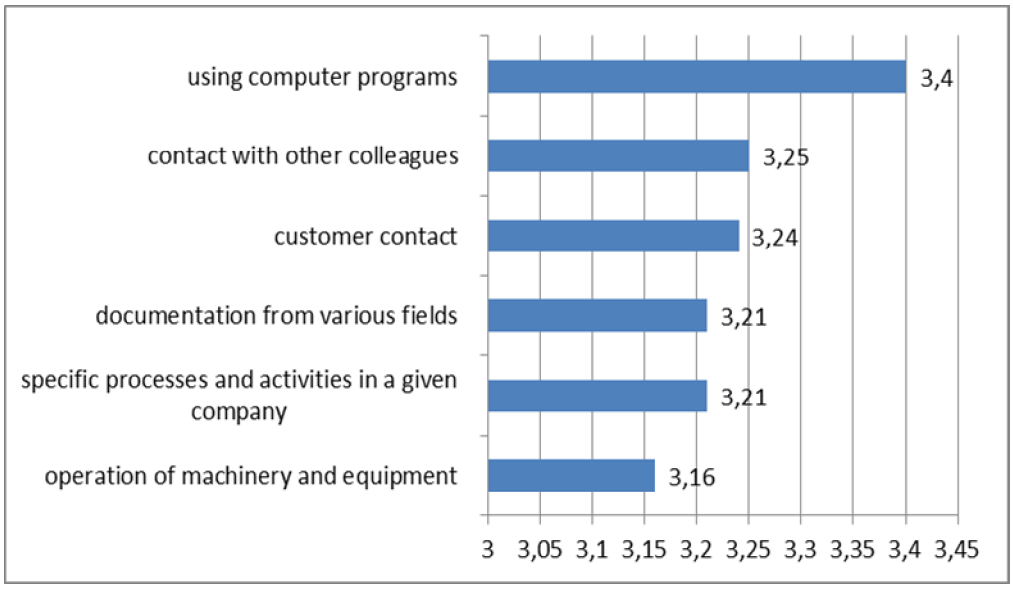

Figure 1. Areas in which apprenticeship is important

Source: Authors' own research

The students found using computer programs to be the most important (3.4), which was followed closely by contact with other colleagues (3.25), customer contact (3.34), documentation from various fields (3.21) and specific processes and activities in a given company (3.21). Operation of machinery and equipment was considered to be the least significant by the respondents (3.1). There were also spontaneous answers, such as being familiar with the range of products on offer, knowledge of foreign languages and mobility. The very fact that the respondents placed computer programs first as an area where experience is the most important and also more than moderately important means that they have correctly recognized the requirements for logistics personnel in the labour market as being familiar with and being able to use relevant software is very important today. Similarly, the students correctly assessed that it is important to practice communication with both co-workers and customers. This indicates their awareness of the essence of soft competences in the labour market. It should also be noted that in all these areas the weight exceeded 3, which means that practical training in all these areas is considered by the students to be at least of moderate importance.

The same formula was used to examine the students' opinion on apprenticeship, in particular divisions of the company. Here too, the respondents were asked to assess the importance of practical training in a given subsystem by specifying whether it was very important, important, of medium importance, of little importance or of minor importance. The semantic descriptions were then assigned weights from 4 to 0 (4 for the most important and 0 for the least important). The results are presented in *Figure 2*.

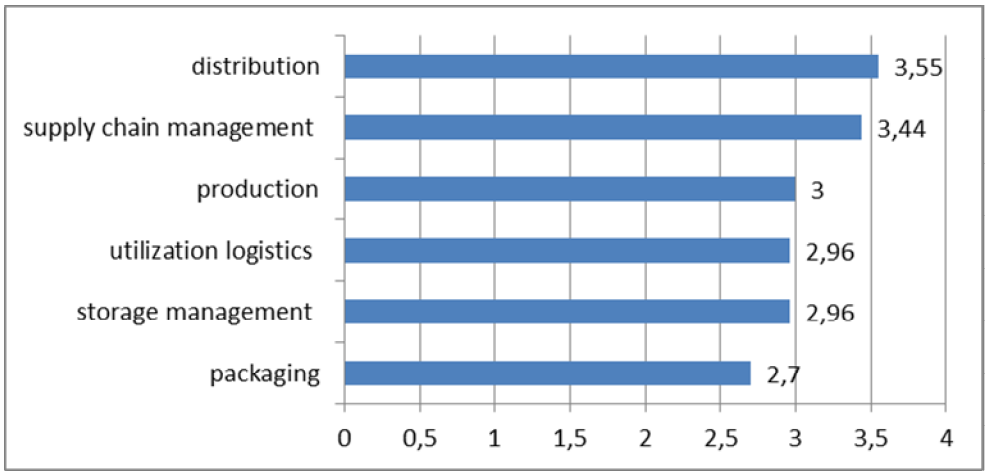

Figure 2. Areas in logistics where apprenticeship is important

Source: Authors' own research

The Survey showed that the students consider distribution to be the most important subsystem, which is later followed by supply chain management (3.44), production (3.0), utilization logistics (2.96), storage management (2.96) and packaging (2.7). It should be noted here that all the areas listed in the survey as those where practical training is important received a relatively high score. The perception of distribution as the area in which practical training and experience is most important derives from the fact that currently there is a widespread emphasis on sales and distribution channels, which students see and of which they are aware. Supply chain management also seems to them to be an area where training is important, which may result from the awareness of the respondents regarding the complexity of this issue. Hands-on experience in other areas seemed to the respondents to be less than moderately important, because they were convinced that it was not in high demand or that it could be gained relatively quickly.

In the next part of the survey, the respondents' self perception was examined in the context of practical training. The respondents were asked in what kind of logistic practical training they feel confident. The replies were given by putting a circle round one of the areas listed in the previously asked questions. Thus, the respondents had a choice of operating computer programs, operating machines, equipment and devices, contacting customers, specific actions and processes in the company and documentation from various areas. The results of this finding are presented in *Figure 3*.

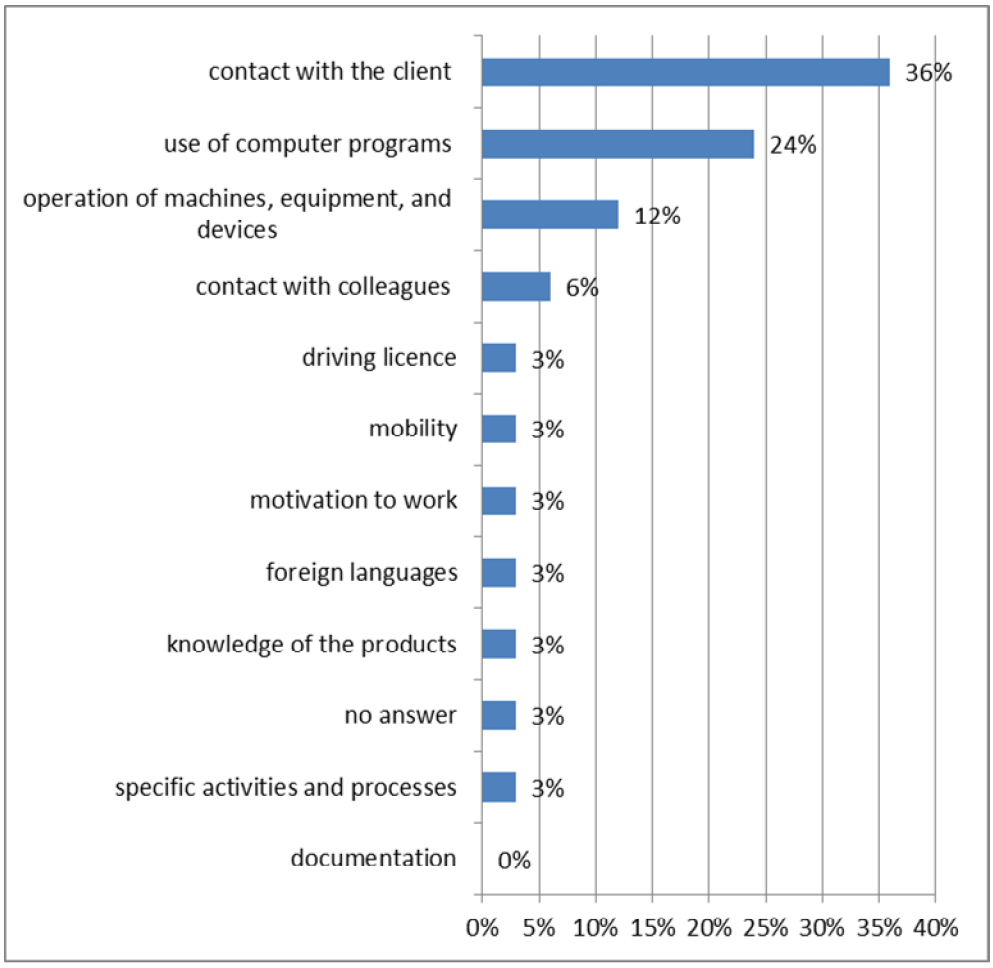

Figure 3. Areas in the operation of an enterprise in which the students feel confident

Source: Authors' own research

The area in which most respondents described themselves as "confident" was contact with the client (indicated by 36% of the respondents). The next area in which the students perceived themselves to be competent was the use of computer programs (24% of the respondents) followed by operation of machines, equipment, and devices (12%), and contact with colleagues (6%). There were also spontaneous answers in which the students included holding a driving licence, mobility, motivation to work, knowledge of foreign languages, specific activities and processes, and also documentation. This distribution of responses corresponds to a large extent to the answers given previously to the question about the areas where practical training is important. The students believe that it is actually the ability of operating computer programs and dealing with the client where experience is the

most important and in these areas they consider themselves competent. It is extremely important because it strengthens confidence on the labour market.

A similar question was asked about the company's subsystems, where the students consider themselves competent i.e. "confident". The replies were given by putting a circle round one of the areas mentioned in the previously asked questions. Hence, the respondents had a choice of warehouse management, production, distribution, packaging, reverse logistics and supply chain management. These results are presented in *Figure 4*.

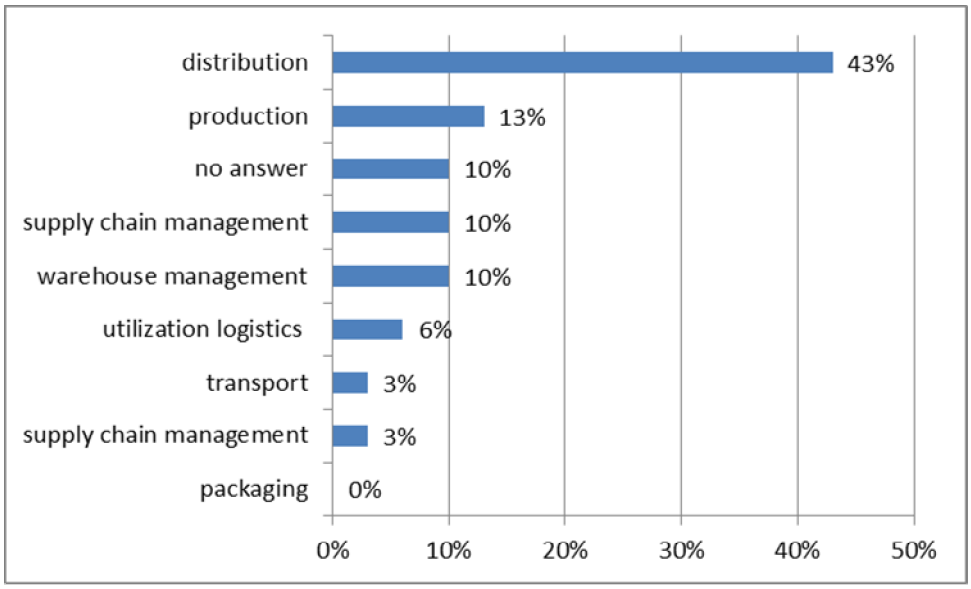

Figure 4. Logistic subsystems in which the students consider themselves competent

Source: Authors' own research

The answers to this question reveal that the students consider themselves particularly experienced in the area of distribution. This is consistent with the answers to the previous questions. In the other areas the respondents do not feel competent, but do not believe that this is necessary. An exception is supply chain management, which is revealed to be an area in which the respondents feel that they do not have enough experience.

The respondents were then asked to determine in which area it was most difficult to gain experience. In this question, they were asked to refer to the areas given in the previous questions and to circle their choice. *Figure 5* illustrates the distribution of the answers to this question.

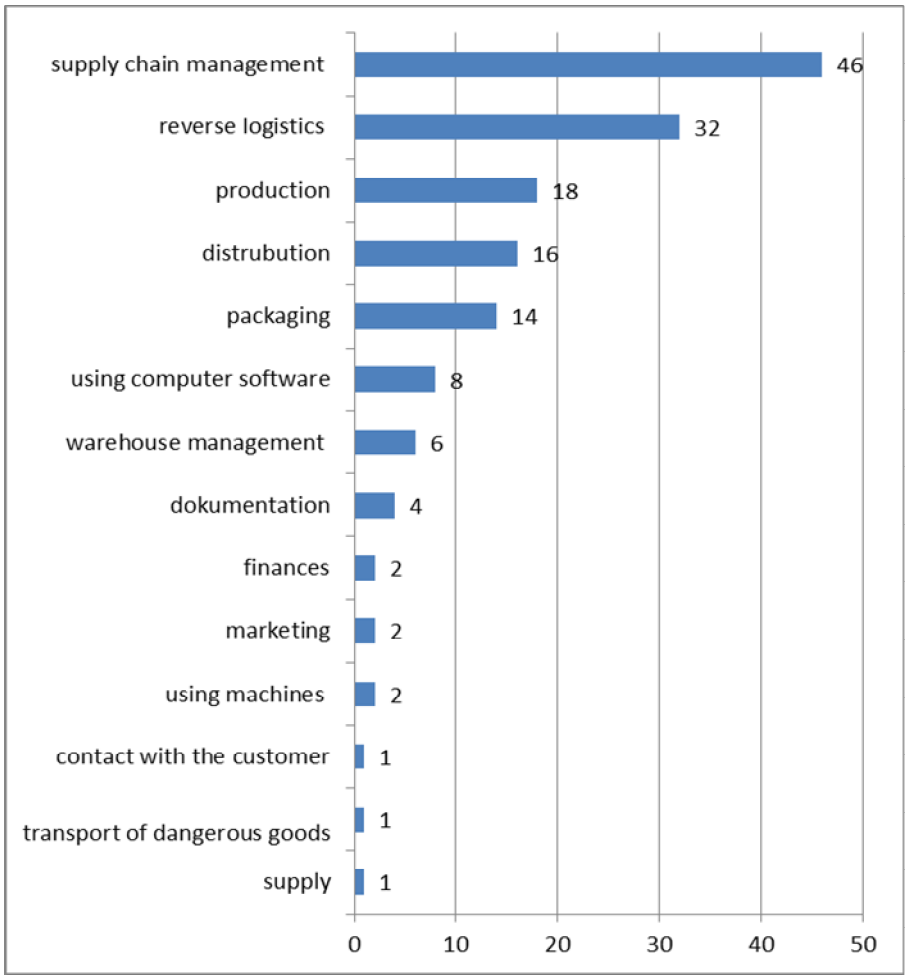

Figure 5. Areas in which it is most difficult to gain experience

Source: Authors' own research

The responses given most frequently included supply chain management (46) followed by reverse logistics (32), production (18), distribution (16), packaging (14), using computer software, warehouse management (4), and documentation (4). Based on the results of the study, it is the easiest to gain hands-on experience in areas such as finance, marketing, machine maintenance, customer contact, transport of dangerous goods, and also in purchasing. This distribution of responses clearly confirms the basic conclusion that has been reached on the basis of the replies to the previous questions: supply chain management is the area where it is most difficult to gain experience. Mentioning reverse logistics here might be somewhat surprising, but it seems that the respondents pointed out this area, because they were actually asked to fill in the survey during their reverse logistics classes, which they encountered during their studies for the first time in the fifth

year, and so far they had had no contact with this subject area. It is also interesting to note that the use of computer programs has been selected very few times as an area where it is difficult to get practical training, which means that the students consider it to be relatively easy. This is certainly due to the fact that they belong to Generation Z described in the first part of this study, and thus it is easy for them to gain experience and master skills related to the use of technology, including computer programs.

The last element of the survey referred to the factors that determine opportunities of finding the best apprenticeship for students. The respondents were asked to indicate on a semantic scale how important a given factor was (it is of no importance, it is of moderate importance, it is of great importance). The list of factors included what is generally thought to be the most common factors determining professional success, i. e. one's own efforts, good luck, acquaintances, competence and graduation diploma from a recognized university or faculty. The semantic descriptions were then assigned weights from 0 to 2 (0 for a factor that is insignificant, 1 for a factor of moderate importance, and 2 for a factor of very high importance). The distribution of average weights for particular factors is shown in *Figure 6*.

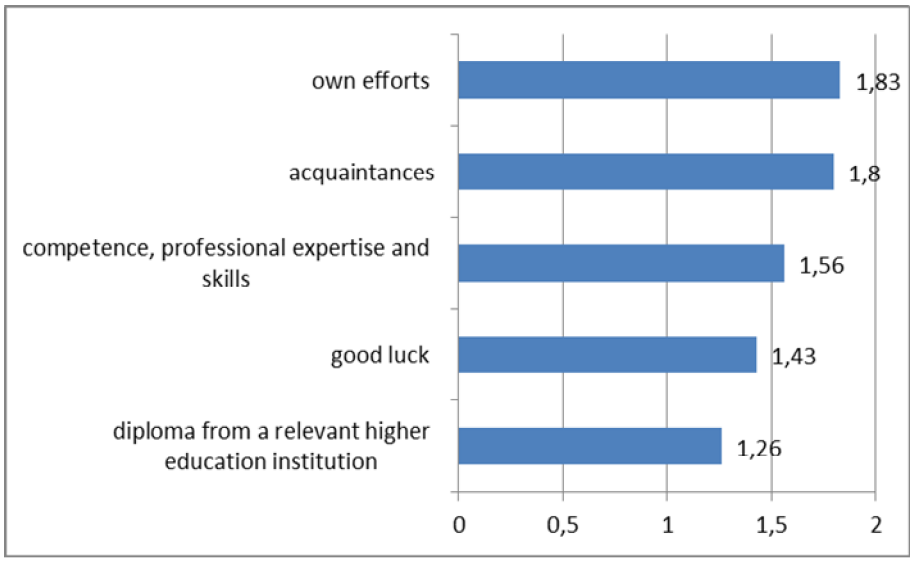

Figure 6. Decisive factors in finding the best apprenticeship

Source: Authors' own research

In the opinion of the respondents their own efforts (1.83) are the most important success factor in obtaining an apprenticeship. Acquaintances (1.8) come next and are followed by competence, professional expertise and skills (1.56), and good luck (1.43). The diploma from a relevant higher education institution comes as the least important factor which is supposed to help to obtain a good apprenticeship (1.26). From this distribution of responses it can be concluded that for the students, the

possibility of obtaining an apprenticeship depends on a large number of factors with the most important ones being their own efforts and acquaintances. While the first factor, i. e. one's own effort, is dependent on the students themselves and brings them closer to the *self-direction* axis, in the case of acquaintances we are faced with an independent factor, located closer to the *conformity* axis. The other factors, i. e. competences, expertise, skills and good luck, are again factors interchanging in the areas of self-direction and conformity. It would be highly desirable, of course, for the students to believe first of all in their own strengths and competences as factors dependent on the individual and which allow them to obtain an apprenticeship. However, it should be remembered that in Poland the myth of having the right acquaintances is still very strong and perceived as a key to getting a job. Therefore, in this context, the student's conviction that the most important factor determining obtaining apprenticeships are their own efforts is a good proof of their self-esteem and personal assessment of job opportunities on the labour market.

Conclusions

Practical training and work experience are an important characteristic of a candidate for a job in logistics and the students are fully aware of this fact. The results of the survey clearly show that they consider the apprenticeship to be very important, in particular in the area of using computer software and in contacts with colleagues and customers. In particular, they place emphasis on distribution and supply chain management and thus, prove to be good observers of modern trends, which strive to provide comprehensive services and excellent customer service. In the opinion of the respondents, they have already had practical training in the most important areas relevant to the labour market needs, although there are also some areas in which they do not feel competent enough, such as e. g. the supply chain management mentioned above. The attitude of the students should therefore be assessed extremely positively, as it is starting to show belief in their own strengths and competence. Doing practical training is a natural process when entering the labour market and it is particularly important in logistics, since logistics as a practical discipline requires practice and experience.

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STUDENCKA PERSPEKTYWA PRAKTYKI I DOŚWIADCZENIA ZAWODOWEGO W ZAWODZIE LOGISTYKA

Streszczenie: Poszukiwanie pracy w zawodzie logistyka zależy w dużej mierze od tego, czy osoba szukająca pracy posiada odpowiednią praktykę i doświadczenie. Studenci wchodzący na rynek pracy mają tego świadomość. Jednocześnie posiadają sprecyzowane poglądy na temat możliwości zdobycia praktyki oraz obszarów, w których jest ona ważna. Celem niniejszego opracowania jest próba odpowiedzi na pytanie, jak studenci postrzegają problem praktyki w zawodzie rozumianej jako doświadczenie w pracy w przedsiębiorstwie w obszarze logistyki oraz roli praktyki w zdobywaniu rynku pracy. Artykuł jest drugą z dwóch części opracowania mającego na celu rozpoznanie, w jaki sposób studenci logistyki postrzegają praktyki studenckie oraz praktykę rozumianą szeroko, jako pracę w przedsiębiorstwie.

Słowa kluczowe: praktyka w zawodzie logistyka, doświadczenie w logistyce, studencka wizja zawodu

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LICENSE AGREEMENT AS A TOOL FOR INTELLECTUAL PROPERTY RIGHTS TRADE

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Abstract: Effective management of intellectual property rights is an important element of a competitive business strategy today. One of the ways to use the above. rights is paid distribution to third parties. The aim of the research is to find an effective tool to market intellectual property rights. The paper presents a legal analysis of the license agreement as a tool for trading intellectual property rights. Due to the fact that the licensing agreement evokes parallel, interpretative doubts as to the application of specific legislation. Therefore, differences in the provisions of the license agreement under the Act on Copyright and Related Rights and the Industrial Property Law were presented. The paper also deals with the interpretative doubts connected with the parallel application of the two above mentioned legislations. The author also formulated a license agreement pattern.

Keywords: license, civil law agreement, intellectual property, business management, inventions

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Introduction

In today's increasingly knowledge-intensive economy, the implementation of technical and organizational innovation in enterprises and organizations is fundamental. It is now a condition sine qua non success on the market. The current competitiveness pillars are depreciated such as low cost strategy or limiting activity to the local or regional sphere. The ongoing processes of economic globalization and liberalization of world trade result in increased competition in one common market. The only right direction in the development of enterprises and organizations is to invest in innovation (Krzywda, Krzywda 2016, p. 75). The whole innovation process in enterprises is time consuming and expensive. This includes, among other things, investments in qualified staff, the construction of research and development centers, the effective management of acquired intellectual property rights, and the promotion and advertising of new products (Kozerska 2016). Each of the above steps is important and none of them can be ignored. After the innovation stage, companies have a variety of ways to effectively use their patents, trademarks, industrial designs and organizational innovations. It is possible to obtain protection for the invention or trademark, to sell the invention, or to make available the rights to it to third parties. The paper describes the latter possibility. It presents a legal analysis of the admissibility of concluding a licensing agreement as one of the tools for intellectual property rights

understood in sensu largo: works, patents granted to inventions, utility models, industrial designs, trademarks, topographies of integrated circuits and geographical indications.

License Agreement – Systematics

The system of contracts in the light of Polish legislation entails two basic types of contracts: named contracts and unnamed contracts. Contracts are defined in the Civil Code (eg sales contract) and other legal acts (eg license agreement). Unnamed contracts, on the other hand, are based on the principle of freedom of contract (Art. 353^1 KC eg know-how agreement) (Grzybowski 1972, p. 21). As can be seen from the above, the license agreement analyzed is a named contract, and thus regulated by law. This means that the principle of freedom of contract is excluded in this respect, and the license agreement itself is limited by the legal regime of a specific law. Therefore, the creation of this type of contract requires a strict reproduction of the conditions set forth in the Act.

The license agreement was governed by two normative acts of the statutory rank: the Act of 4 February 1994 on copyright and related rights (Ustawa z dnia 4 lutego 1994 r. o prawie autorskim i prawach pokrewnych) (Journal of Laws 1994 No. 24 item 83, as amended) and the Act of 30 June 2000 Industrial Property Law (Ustawa z dnia 30 czerwca 2000 r. *Prawo własności przemysłowej*) (Journal of Laws 2003 No. 119 item 1117, as amended). The copyright law deals with a broadly defined work, which means "any manifestation of creative activity of an individual character, established in whatever form, regardless of its value, purpose and manner of expression" (Art. 1 of the Copyright Act and Related Rights). In the analyzed area, however, only the turnover of selected industrial property rights is regulated. Therefore, in the latter case, the license agreement is only admissible in the scope of trading rights to the invention pursuant to art. Article 66, Utility models (Article 100 (1)), trade marks (Article 163 (1)) and industrial designs (Article 118 (c)). Other categories of industrial property rights: Integrated circuit topographies and geographical indications are not subject to a license agreement, and rights to them may not be transferred through this agreement. The regulatory framework in the national legislation points to four distinct licensing functions: they promote intellectual property, allow intangible assets, influence innovation, and provide a means of resolving conflicts between the creator and the buyer (Pahlow 2006, p. 227).

License Agreement – Copyright Act and Related Rights

Under the Copyright and Related Rights Act, the right to use a work in excess of the permitted personal use may be obtained by obtaining a license from an authorized person and by acquiring the copyright of the rightful owner.

An agreement for the acquisition of copyright to a work results in the transfer of those rights to the buyer who becomes the sole beneficiary.

The license agreement, however, results in the acquisition of the right to use the work itself by the purchaser, but in this case the property rights to the work remain with the creator. From the buyer's point of view, the license agreement is therefore less favorable.

Under copyright law (Article 67), you can distinguish two basic types of license: exclusive license and non-exclusive license. In the case of an exclusive license, the licensor agrees not to grant licenses to other operators in the field. As a consequence, the exclusive license agreement must specify the fields of exploitation. This will be an essential element of this agreement. It is worth noting that granting an exclusive license does not deprive the licensor of the right to use the work. Consequently, the waiver of this right by the licensor should be regulated separately in the contract. A non-exclusive license does not deprive the licensor of the ability to conclude licensing agreements with other entities in a given field of use. This means that the licensor may authorize the use of the work in the field of operation of more than one licensee. In both cases, the licensee may not grant further license to third parties (sublicense).

The form of the license agreement depends on the type of license granted. In the case of an exclusive license, a written form is required, while a non-exclusive license does not require such a form. In practice, however, the written form is used for evidence purposes.

The provisions of the Copyright Act and Related Rights contain provisions for a license agreement, but they are provisions that are of a relatively legal nature. This means that they apply only if the parties have not agreed otherwise. This therefore allows for a wide range of freedom of regulation of specific legal relationships in this area (Domańska-Baer 2009, p. 55). In terms of art. 64 copyright law property rights to a work pass to the buyer at the moment of acceptance of the work, unless the contract provides otherwise. The license agreement must always specify the fields of exploitation, ie the scope of use of the work by the purchaser (Article 41 (2)). This allows the licensee to dispose of the rights to use other fields of exploitation of the work and to settle any doubts between the parties in this regard. Interesting rules in this respect allow you to conclude license agreements for future works at the time of concluding a license agreement that is not yet existing. However, in this case the work must be clearly marked in the contract. However, contracts (including license agreements) for the transfer of rights to all current and future works of the respective creator are excluded. Licensors are always entitled to remuneration unless the contract provides otherwise. In the absence of contractual clauses in this respect, the average value of creation of the work and the transfer of the right to the license are assumed. The above two bases are always taken into account.

The creators have the right to withdraw from the contract. The inventor (the licensor) may refer to: his or her significant creative interests (Article 56 (1)), failure to distribute the work at a particular time included in the licensee (Article 57 pr. inappropriate form (Article 58 (1)).

Important creative interests have not been specified in the law. Court case judgments and literary achievements, however, indicate "the author's continued

goodwill" and "the desire to disseminate the results of artistic or scientific work" (Barta et al. 2005, p. 489).

The licensee may withdraw from the contract if: the creator has not provided the work within the specified time, the delivered work has a defect, the work is affected by a legal defect.

The problem is that the work "does not meet the conditions specified by the contract or the resulting work, for example, the script is incomplete, the map contains errors, advertising does not attract new customers" (Barta et al. 2005, p. 472).

A work is affected by a legal defect where the creator (potential licensor) does not have the right to use it, for example if he is the co-author of the work and acts without the knowledge and consent of the other contributors. A legal defect is also dealt with when the work is plagiarized.

In legal understanding, the rights resulting from the license agreement are temporary. According to art. 66 CA, the basic duration of the license is 5 years. Upon expiry of this term, the license to use the work expires unless the contract provides otherwise. In the contract, however, it is possible to reserve a shorter or longer duration of the legal relationship. In case of extending the duration of the license agreement after 5 years, it is treated as an indefinite contract. Regardless of the period for which each license agreement is concluded, you can terminate it. The entitlements that arise therefrom also expire upon the expiry of the copyright of the creator (Baliga, Kućka 2008, p. 8).

License Agreement – Industrial Property Law

As already mentioned, the Industrial Property Law also regulates the issue of concluding a license agreement. In contrast to the copyright in this case, the license can only apply to patents granted to inventions, utility models, industrial designs and trademarks. According to art. 66 (2) Industrial Property Rights "the patentee may grant, by a contract, another person a license to use his/her invention (license agreement)". The reference to other industrial property rights includes the already mentioned provisions of art. 100 sec. 1, art. 118 and art. 163 (1) IPL. Under the law, several types of license can be distinguished: full and limited license, exclusive and non-exclusive license and simple, limited and extended license.

A full license means that the licensee is entitled to use the invention to the same extent as the licensor.

A limited license, however, takes place when the scope of use of the invention is limited in some way.

An exclusive license as in copyright act means that the licensor has committed not to grant any further license to the same field of use. As in the case of copyright, the licensor may additionally be obliged not to use the invention. This type of license is sometimes referred to in the literature as a strong license (Sołtysiński 1975, p. 256).

Non-exclusive license makes it unlike the exclusive license to use the invention also by the licensor, which can lead to competition between the licensor and the

licensee. If the contract does not indicate which type of license is the legal presumption that it is a non-exclusive license (Article 76 (6) of the Industrial Property Law) (du Vall 2008, p. 282).

A simple license contains only the substantive elements of the license agreement without the additional clauses.

Limited license contains certain limitations compared to a simple license.

The extended license provides additional benefits for the licensee as set out in the Additional Clauses.

In the industrial property law, in addition to the above, the legislator also names specific types of license, namely open license and implicit license. License open on the ground of art. 80 p.w.p. It is permissible to make a declaration of readiness to grant a license to use the invention to the Patent Authority. Such a statement can not be revoked or amended. In this respect the statement is treated as an offer within the meaning of the Civil Code. This type of license is always a full and non-exclusive license and the license fee can not be higher than 10% of the benefit obtained by the licensee in each year of use of the invention, after deduction of expenditure (Article 80 (4)). An open license is obtained by accessing the invention even without negotiating with or before the end of the contract. The sole obligation of the licensee is the written notification of the entitled user of the invention within a month of starting work. Access to an open license may also occur through negotiations between the licensor and the licensee. Such negotiations are aimed at lowering the license fee (below the 10% threshold).

The form of concluding the license agreement on the basis of the industrial property right is one and clearly defined. Each license agreement shall be in writing under pain of nullity. However, in comparison with copyright regulations, a license agreement can only be concluded by a patentee, and thus no license agreements for inventions protected by a patent are excluded. It is noteworthy that a license in every form constitutes the burden of a patent as exclusive to the invention and as such also applies to the successor of the law (Nowicka 2004). The implied license is in a situation in which the test taker transmits the results to the customer. It is then presumed that the inventor has granted the licensee permission to use this invention (Article 81 of the Code). The legal qualification of the implicit license depends to a large extent on the content of the research contract. It may therefore be qualified in one case as an exclusive license and in another as a non-exclusive license.

Industrial property law also classifies a separate type of license, namely a compulsory license. It can be granted only if the statutory requirements are met:

1. Where it is necessary to prevent or to remove the state of the security of the State, in particular in the fields of defense, public order, the protection of human life and health and the protection of the environment.
2. Where it is found that a patent is being misused in terms of Article 68 IPL.
3. Where it is found that a patent holder granted earlier priority (earlier patent) fails to agree to conclude a licensing agreement to meet the needs of the domestic market through the use of a patented invention (dependent patent) the use of which would be made under the scope of the earlier patent.

We need to clarify point 2. Misuse of patent law in terms of Art. 68 p.w.p. is defined as "preventing the use of the invention by a third party if it is necessary to meet the needs of the domestic market and in particular where public interest requires so and the product is available to the public in insufficient quantity or quality or at excessive prices". Such misuse is not considered to prevent the invention use by third parties within 3 years from patent granting.

In the event of at least one of the three conditions stated above, the Patent Office (Authority) shall announce the possibility of applying a compulsory license in the "Patent Office Notifications". The compulsory license "may be granted if the applicant demonstrates that he/she has demonstrated the good faith in will to obtain a license. Fulfillment of this condition is not necessary to grant a compulsory license to prevent or remove a state of threat to the security of the State" (Art. 82 (4)) The compulsory license is always a non-exclusive license, and the licensee of the invention is obliged to pay the license fee to the patentee. The amount of this fee, as well as the scope and duration of the compulsory license, and the detailed terms of its exercise, shall be determined by the Patent Office.

Conclusions

The analyzed license agreement is one of the possibilities for the legal trading of intellectual property rights. The source of the license may be the law as in the case of an implied license or a compulsory license (Szczepanowska-Kozłowska 2012, p. 14). The legal provisions of the license agreement indicate a wide voluntary nature in the formation of civil-law relations in this respect. In spite of two normative acts governing the analyzed agreement, the parties must be considered to have broad discretion in shaping a specific contract. The statutory regulations are of a relatively binding nature depending on the provisions of a specific contract. Consequently, one can not speak of a universal formula of a license agreement covering both works within the meaning of the Copyright and Related Rights Act and the Industrial Property Law within the meaning of the Industrial Property Law. The stated subjects of the agreement are so varied that the provisions of the specific license agreements will also be different. The above is also supported by a large number of types of licenses, which are regulated by contractual and statutory regulations. In theory, it is possible to formulate a single model license agreement applicable to all works including industrial property rights under applicable law. In practice, however, this solution will not be applicable because of its universal character.

The main differences between the two analyzed modes are the matter of license agreement and the type of license. Under the copyright law, the matter of license agreement may be broadly understood as the works that arise when being are established. They are therefore not registered anywhere, and their protection comes directly from the law. The legal mode under the Industrial Property Law has been shaped differently. In this case, it is possible to grant licenses only to registered and protected inventions, utility models, industrial designs and trademarks. Subject of

the license agreement on the grounds of IPL is therefore restricted to the abovementioned rights.

Under CA it is possible to grant a license to use future works which, at the time of signing the license agreement, do not yet exist. Industrial property rights in this respect are limited only to existing ones.

Copyrights Act distinguishes two basic types of licenses (exclusive license and non-exclusive license). In the light of Industrial Property Law, we can take advantage of the extended range of licenses (exclusive and non-exclusive, full and limited, simple, limited and extended) and open and implicit, As well as compulsory).

License based on copyright can only be a contract between the creator (the licensor) and the licensee. In the light of the Industrial Property Law, the basis of a legal relationship may be both, the contract and the law (applied in case of compulsory license).

Licensing in certain situations constitutes a restriction on the freedom of disposal of rights to intangible assets. In the light of the Industrial Property Law, license agreements can only contain patented inventions and registered utility models, industrial designs or trademarks registered in the Patent Office. There is no such possibility for unregistered industrial property rights. In such cases, unlawful civil law contracts may be used to transfer rights to know-how or business secrets. There are no restrictions on the use of copyright laws, as a non-registered utility model, industrial design or trademark treated as a work under Copyright Act.

Attachment 1
Licence agreement (contract) pattern.

Licence agreement

concluded in Częstochowa on ..... 2017 between:
Czestochowa University of Technology with its seat in Czestochowa
ul. Dąbrowskiego 69 42-200 Czestochowa, NIP (tax ID) .....
represented by the Rector of Częstochowa University of Technology
.....
- hereinafter referred to as the "Licensor"

and

……...
based ..... , ...-. ...., NIP (tax ID) .....
represented by
1. .....;
2. .....
hereafter referred to as "Licensee"

§ 1

1. The subject of this agreement is the authorization to use the work within the meaning of the Act of 4 February 1994 on Copyright and Related Rights (ie 2006, Journal of Laws No. 90, item 631, as amended) which is a textbook called "..... ..... ", later referred to as Work.
2. The Licensor declares that it is entitled to license to the extent necessary for the performance of this license agreement and that the use of the Work within the terms of the agreement does not infringe the copyright of the Work creators. The Work is protected by the Copyright and Related Rights Act. Licensee acquires only the right to use the Work within the scope of this Agreement.

§ 2

1. Licensor grants to Licensee a non-exclusive and non-transferable right to use the Work (license) in Poland.
2. The license is granted free of charge.
3. Licensee is required to use the Work solely for didactic and educational purposes within the scope of its business.
4. Licensee is not authorized to make commercial use of the Work.
5. Licensee may not authorize another entity to use the Work for a licensing (sublicense) or to resell, rent, lease, lend, rent, or make available to third parties otherwise to the extent expressly provided for by this Agreement.

§ 3

The Licensee does not agree to make any changes, supplements, adaptations, alterations or further translations in the Work.

§ 4

1. The license is granted for the period from ….....
until ….....

§ 5

The Licensor agrees to provide Licensee with the materials necessary for the proper use of the license within 7 days of the date of this Agreement. Licensee does not acquire ownership of copies of the Work or other materials provided by the Licensor in execution of this Agreement.

§ 6

The Licensor shall not be liable for any damages resulting from the use or inability to use the Work. The Licensor does not warrant that the Work will fully meet Licensee's requirements. The Licensor is not responsible for third party claims arising out of the use of the Work, and unrelated with copyright.

§ 7

Any changes to this contract must be in writing in the form of an annex under pain of nullity.

§ 8

In matters not covered by this agreement, the relevant provisions of the Act of February 4, 1994 on Copyright and Related Rights and the Act of April 23, 1964, the Civil Code are applied.

§ 9

Any disputes arising out of this Agreement will be settled by the Court of Appeal for the Licensor's registered office.

§ 10

This agreement was made in two identical copies, one for each of the Parties.

Licensor **Licensee**

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UMOWA LICENCJI JAKO NARZĘDZIE OBROTU PRAWAMI WŁASNOŚCI INTELEKTUALNEJ

Streszczenie: Efektywne zarządzanie prawami własności intelektualnej stanowi współcześnie istotny element strategii konkurencyjnej przedsiębiorstw. Jednym ze sposobów wykorzystania ww. praw jest ich odpłatne udostępnienie na rzecz podmiotów trzecich. Cel badań to znalezienie efektywnego narzędzia do obrotu prawami własności intelektualnej. W artykule zaprezentowano prawną analizę umowy licencyjnej jako narzędzia obrotu prawami własności intelektualnej. Zaprezentowano różnice w regulacji umowy licencyjnej na gruncie ustawy o prawie autorskim i prawach pokrewnych oraz ustawy Prawo własności przemysłowej. W artykule rozstrzygnięto także wątpliwości interpretacyjne związane ze stosowaniem równolegle dwóch wspomnianych wyżej reżimów prawnych. Sformułowano także wzór umowy licencyjnej.

Słowa kluczowe: licencja, umowa cywilnoprawna, własność intelektualna, zarządzanie przedsiębiorstwem, wynalazki

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PROINNOVATIVE ACTIVITIES OF SMEs IN EMPIRICAL RESEARCH

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Abstract: The paper is devoted to the problem of innovativeness of SMEs. The aim of the study is to present innovation landscape in terms of matrix (the theoretical part) and the attempt to exemplify innovation areas in the system of regions and appropriate innovative activities of enterprises (the empirical part). To achieve the intended objective there has been used the methodology of the review of the domestic and foreign literature and the methods of comparisons and surveys conducted among entrepreneurs of SME. The value of the study consists in the presentation of new trends in the landscape of innovative activities of SME and the indication of the desired actions to develop the interest of SME in these activities.

Keywords: innovation, innovation landscape, innovation of SMEs

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Introduction

In 2009 the OECD released Innovation Strategy in which there were indicated new characteristics of innovation. Modern innovation, among others, is characterized by: the number of participants larger than before, mixing and merging of the number of participants larger than before, creation in accordance with increasingly diversified mechanisms, the course in increasingly varied environments: research consortia, new technological companies, centers of technology transfer, venture capital companies and an increase in importance of hybrid value chains on the way of the integration of innovation and entrepreneurship of the business sector and the social sector (OECD 2009).

A well thought-out strategy requires consistent, long-term activities and coordination at each stage of enterprise management. The research by KPMG indicated that less than one fifth of medium and large enterprises in Poland have formally specified innovation strategy; only every tenth company appointed the board member responsible for innovation. Innovativeness is the element of the strategy of 47% of medium and large enterprises, however, it is more common in industrial companies (50%) than in trading and service ones (43%). Nevertheless, in practice, only in every fifth company, innovativeness is of crucial importance compared to the other strategic goals, whereas in as many as two thirds – rather big. Only every tenth company appointed the board member responsible for this area. The studies indicate that only 17% of industrial companies and 13% of trade

and service companies are experienced innovators or innovation leaders. Early--stage innovators constitute 30% of industrial companies and 23% of trading and service companies. The other enterprises are the ones of little innovation (respectively 32% and 42%) and non-innovative ones (21% and 22%) (The report by KPMG 2017, The report by KPMG 2014; Szajt 2010). A well thought-out strategy allows for the selection of such an approach to innovation which is also the most suitable for the opportunities and needs of SME (Krupski 2014; Krupski 2007; Prahalad, Ramaswamy 2005).

Innovation management of enterprises (selected issues)

Innovativeness is the resultant of many complex and various factors conditioning the scope, scales, intensity and directions of the conducted innovation activity (Wiśniewska, Janasz 2015; Jelonek 2017, p. 77). C. Christensen identifies radical changes (disruptive innovation that changes the course of development) and incremental ones (sustaining innovation) (Christensen 2010, p. 75). Innovation is any new idea or approach that is used in substantially different manner to create value for the organization and customers, suppliers and also the whole of the human race. Therefore, innovation is directly linked to value creation (Lee, Olson 2012; Romanowska 2017, p. 69).

In literature, it is underlined that any innovation can be characterized in two respects:

- degree of technological change,
- degree of change in business model.

The combination of the above mentioned aspects of innovation allows for the isolation of four categories of innovation: routine innovation, disruptive innovation, radical innovation and architectural innovation (see: *Table 1*).

Table 1. The map of innovation landscape: business model and technological competences

Requires a new business model	**DISRUPTIVE INNOVATION**	**ARCHICECTURAL INNOVATION**
Uses the existing business model	**ROUTINE INNOVATION**	**RADICAL INNOVATION**
	Uses the existing technological competences	Requires new technological competences

Source: Author's own study based on (Pisano 2015, p. 95)

The above innovation landscape matrix has four quarters that illustrate four categories of innovation[1].

Disruptive innovation is based on a new business model; technological revolution is not necessarily needed for its development. This type of innovative activities affects undermining or disrupting business models of competitors. The

[1] The presented matrix is based on the research and achievements of such scientists as: Gary P. Pisano, William Abernathy, Klim Clark, Clayton Christensen, Rebecca Henderson, Michael Tushman.

activity of the Google consortium, which uses the Android operating system in mobile devices, is given as an example of innovative activities in this field. Moreover, users get this system for free; this affects the competitiveness of the Apple and Microsoft system which users must pay for. *Routine innovation* amounts to the development of technological competences owned by the enterprise with full adjustment to the current business model and current customer base. The example of innovation from this group is new versions of the Windows operating system and subsequent models of iPhone. As an example there are given: the production of new generation BMW 3 or the activities of the Intel company, which launches more and more efficient microprocessors onto the market, which allows for maintaining high margins. *Architectural innovation* is the combination of changes in technology and business model. Innovative activities of this type particularly adversely affect the condition of old-established enterprises. An example of innovation in this field is digital photography. For the Polaroid and Kodak companies it amounted to the necessity of acquiring new competences in the field of design of photographic cameras, semi-conductors, or imaging technology; for pharmaceutical companies, this meant the necessity to personalize medical services. *Architectural innovation* indicates the newness of technological competences. An example of radical innovation is, dating back to the seventies and eighties of the previous century, the use of genetic engineering and biotechnology in research on new drugs; drugs that are the result of biotechnological research fit well the business models which required large investments in research and development; the source of their funding was the profits from highly profitable products. For flight companies, radical innovation was jet engines, and for telecommunication companies – fiber optic cables.

In the context of the presented attempt to order innovation landscape, the question arises: what is the preferred type of innovation? The examples presented above indicate that different types of innovation within the specified time not so much replace but complement each other. The Intel, Apple, Microsoft companies would not have had the opportunity to generate huge profits if they had not introduced disruptive innovation. Returning to the posed question, it should be noted that the structure of innovation is the resultant of many factors, such as: pace of technological changes, intensity of competition, changes in the main world markets, strengths of the organization or degree of satisfying customers' needs. In innovation strategic management it is important to balance own capabilities and the size of technological opportunity in this field. It should be emphasized that the road to economic and social success is difficult and complex; huge financial outlays on research and development do not always mean the promotion on the ranking lists of countries and innovative enterprises (Romanowska 2015, p. 4).

The research in the field of innovation development of SME in Poland

On the basis of the research by EFL SA, extended to the reports of Polish Agency for Enterprise Development, Central Statistical Office, Deloitte and own research, below, there are presented the results of the empirical research in the field

of innovation of micro-, small and medium enterprises. The results of the research include: the assessment of innovativeness of SME by regions (there have been isolated six regions in the country), indication of activities that could increase the level of investments in innovation and determination of areas of innovative activities in the country and among enterprises of the Silesia Province (Knop, Brzóska 2017, p. 87).

In the opinion of the surveyed entrepreneurs, the southern region is characterized by the highest innovativeness (59% of indications), including the Lesser Poland Province and the Silesia Province. The second position, with about 55% of indications, is occupied by the central region, including the Mazovia Province and the Łódź Province. The third position is occupied by the south-west region (47.1% of indications) (see: *Table 2*).

Table 2. Innovation of companies by regions (own opinions of the companies)

No.	Region	% of indications
1	Southern (the Lesser Poland Province, the Silesia Province)	59.0
2	Central (the Mazovia Province and the Łódź Province)	55.5
3	South-West (the Opole Province, the Lower Silesia Province)	47.1
4	North-West (the Western Pomerania Province, the Lubuskie Province, the Greater Poland Province)	46.1
5	Eastern (the Świętokrzyskie Province, the Lublin Province, the Podkarpackie Province)	40.3
6	Northern (the Pomerania Province, the Kuyavia-Pomerania Province)	30.4

Source: The report by EFL SA (EFL 2016)

The north-west region received by 1% less indications than the south-west region. The subsequent position in the innovation ranking is occupied by the eastern region; the number of indications specifying innovativeness of the region was lower by about 19% than in the case of the region occupying the first position in terms of innovativeness. The lowest score in terms of innovativeness of SME was achieved by the northern region (about 30% of indications) (see: *Table 2*). Summing up, it should be noted that, in the light of the presented research, the southern part of Poland is more innovative than the northern one (Kawczyk-Sokołowska 2012, p. 145).

In the situation where the spread between the regions occupying the first and last positions amounts to approximately 50%, it is reasonable to investigate, collect information on what should be done to make the increased number of SMEs invest in innovation. The research carried out among entrepreneurs of SME indicates that the sources of funding are of the key importance in this field. 32% of the entrepreneurs indicated the opportunity to obtain non-repayable grants for innovative activities. A significant determinant of innovative activities is legal

provisions; 30% of the entrepreneurs were in favor of regulations favorable for innovative activities. Further steps to improve the level of innovativeness are innovation reliefs for works on innovation (20% of indications) (see: *Table 3*).

Table 3. What should be done to make the increased number of SMEs invest in innovation

No.	Specification	% of responses
1	Provide greater opportunities to receive non-repayable grants for innovation	32
2	Change legal provisions for the ones favorable for innovative companies	30
3	Introduce innovation reliefs for works on innovation	20
4	Increase availability of external funding (credit, lease)	16
5	Provide consulting, knowledge, cooperation (e.g. with universities)	2
6	Other suggestions	4
7	Don't know, it is difficult to say	3

Source: (EFL 2016; Wiśniewska, Janasz 2017, p. 17-27)

According to the respondents, for SME, the access to external funding ought to improve (16% of the responses). Entrepreneurs mostly build their safety and development on their own funds, profits (92% of those questioned) – by Keralla Research for EFL SA; in the case where external support is used. The most popular are bank loans - 44% of the respondents use them; lease takes the second position – this form of funding is indicated by every fifth entrepreneur. About 30% of the respondents indicate that a significant reason for not conducting proinnovative activities is the lack of funds. According to the entrepreneurs, in the absence of own financial surplus, there are no opportunities for investment in innovation. The selection of own funds as the source of financing mainly refers to the purchase of fixed assets. Entrepreneurs decide on such a solution since they do not want to have liabilities; arranging external sources is time-consuming and requires a lot of formalities. The entrepreneurs underline that they their business is too small to get into debt and there is no offer for SME on the market.

As the research by EFL SA indicates, as much as 48% of the respondents claim that the investments they made in the last 3 years were innovative in their nature. Unquestionably, the purchase of software occupied the top position, followed by technologies – new lines, new manufacturing methods and new or substantially improved products. On the other hand, a definitely small percentage decided on organizational changes or improving the competences of their employees – respectively 5 and 5.4%. With the division into types, 547 enterprises made investments in process innovation, i.e. the one that results in new or significantly improved methods of manufacturing, distribution, logistics or support processes in the company. Technological innovation, e.g. new production lines, new machines –

was implemented by fewer, since approximately 48%, enterprises of the SME sector. Product innovation is implemented less often by the companies of the SME sector. The expenses concerning organizational innovation, resulting in at least new operation methods (12%) and marketing innovation (8.2%), which would significantly alter the marketing strategy of the company, occurred the most rarely (see: *Table 4*).

Table 4. Areas of innovation of SME in the country and the Silesia Province

No.	Areas of innovation	% of indications	
		The country	The Silesia Province
1	Software	39.0	20.0
2	Technologies, solutions (new lines, new manufacturing methods)	37.0	31.0
3	New or significantly improved products	24.0	13.0
4	Process improvements (new or significantly improved methods of manufacturing, distribution, logistics)	12.0	22.0
5	Construction or modernization of buildings, lodging, purchase of land	12.0	5.0
6	Marketing (re-positioning, changes in the strategy concept	8.2	9.0
7	The latest machines and equipment	8.0	8.5
8	Employees (including training, competences)	5.4	7.0
9	Organization (new methods in the principles of operation)	5.0	3.0
10	New technologies (tablets, mobile devices)	3.0	3.0
11	Purchase of vehicles	2.0	5.0
12	Others	2.0	4.0
13	Refusal	2.0	4.0

Source: Author's own study based on Author's own research[2] and the report developed by EFL SA (EFL 2016)

Marketing and organizational innovation areas of SME of the Silesia Province were comparable to the average obtained in the country; in this innovation area, the activity of the Silesian enterprises was low. The areas of innovativeness in the field of technology were significantly different. There dominated new lines and new manufacturing methods (31% of indications) and new or significantly improved methods of manufacturing, distribution, logistics (22% of indications); software occupied only the third position (20% of indications). The author's own research indicates that innovation in the field of software was conducted in the surveyed

[2] Author's own research included the group of 53 production, trading and service companies of the SME sector. The questionnaires were addressed to the owners of enterprises via e-mail in November 2016.

companies in previous years. Three years ago there was exchanged specialized software used in production, designed tools, management software, platforms for communication with customers and contractors.

Conclusions

Proinnovative activities of enterprises are subjected to development and improvement in the field of theoretical concepts and areas of practical applications. Changes in the functionality of innovation occur along with changes in external and internal conditions of the functioning of enterprises which affect innovation management systems. The conducted quantitative and qualitative research indicates that the innovative enterprise must have determined owners who will consistently manage the company while stimulating their innovative activities; 76% of the respondents indicate the decision of managers who get involved in innovative activities.

Nevertheless, a very small percentage of the respondents (about 5%) invested in training and development of employees' competences. Polish entrepreneurs are reluctant to invest in staff development for fear they would expect a pay rise or move on to competitors.

Innovation strategies are subjected to evolution; they are verified by market realities, technologies, regulations and competitors (Kościelniak 2017, p. 112-119; Pachura, Zajac, Matlović 2017, p. 110). Also, innovative activities of SME are subjected to constant experimenting, learning and adapting to external constraints.

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Streszczenie: Artykuł poświęcono problematyce innowacyjności MŚP. Celem opracowania jest ukazanie krajobrazu innowacji w ujęciu macierzy (część teoretyczna) oraz próba egzemplifikacji obszarów innowacji w układzie regionów i właściwych działań innowacyjnych przedsiębiorstw (część praktyczna). Dla osiągnięcia zamierzonego celu zastosowano metodę krytycznej analizy literatury krajowej i zagranicznej oraz metody porównań i badań ankietowych przeprowadzonych wśród przedsiębiorców MŚP. Wartość opracowania stanowi ukazanie nowych tendencji w krajobrazie działań innowacyjnych MŚP oraz wskazanie działań pożądanych, celem pogłębienia wiedzy o stosunku MŚP wobec tych przedsięwzięć.

Słowa kluczowe: innowacje, krajobraz innowacji, innowacje MŚP

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THE INFLUENCE OF LOGISTICS CENTERS ON THE REGION DEVELOPMENT ON THE EXAMPLE OF BEŁCHATÓW DISTRICT

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Abstract: Logistics centers are considered a good investments stimulating local economy and activating new undertakings related to influx of new business entities. The article presents principles of operation of logistics and distribution centers, as well as their main responsibilities and functions. The aim of this paper is to define and classify such centers. What is more, as far as their location is concerned, the potential localization of logistics centers are mainly urban agglomerations, sites that could handle several provinces with their main agglomerations and finally locations with high concentration of industry and logistic services. An example of such solution is Bełchtów district.

Keywords: logistics center, distribution center, location, development

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Introduction

As a result of global economic processes, formation of distribution and logistics centers has become a common phenomenon (Skowron-Grabowska et al. 2017, p. 102). The most popular types of functional and spatial concentration are distribution centers. They have been replacing retailers' warehousing facilities and manage finished goods warehouses on behalf of manufacturers. As a result, distribution centers are essential to those distribution channels which involve more participants, both the suppliers and the consignees. Manufacturing and trading companies have been increasingly entrusting realization of some tasks to businesses from the transport and logistics field. Hence, the first decade of this century has seen an increase in the number of new distribution centers. This phenomenon concerns mainly third-party logistics businesses, which offer comprehensive logistics services. Logistics park is a more advanced form of functional and spatial concentration. It is a cluster of facilities that enable not only the typical wholesale activities, but they also facilitate conducting manufacturing, business and logistics services. Globalization of production and trade, as well as necessity of utilizing up-to-date logistics in the product distribution process have resulted in a demand for a site with innovative service offer.

Modern warehousing facilities are situated in most large urban centers or in their vicinity. This is due to the fact that the state of the road infrastructure in those

areas is relatively good and they also have convenient connections with pan--European road network (Wojciechowski 2012, p. 1382-1384).

Creation of logistics centers is a response to the progressing changes both in national and international economy. Determining clear needs of improving the standards of logistics services constituted the basis for creation of junctions in logistic networks, where the goods could be unloaded, repacked and consolidated accordingly to the requirements of fragmented distribution.

Distribution centers vs logistics centers

The term 'logistics centers' requires defining because clusters of warehousing facilities built mainly by developers are also associated with them, even though it is not necessarily always correct when we consider their organization and functionality (Brzozowska, Łyduch 2017, p. 229-236).

Logistics center is a functional-spatial object with infrastructure and organization where logistic services are implemented. Those include goods receipt, storing, distribution, apportion and dispensing as well as complementary services rendered by entities independent of consigner or consignee (Fertsch 2006, p. 79).

Distribution center is an organizational unit engaged in warehousing goods which belong to suppliers and distributing those goods to recipients pursuant to, instructions of the goods' owner (Fechner 2004, p. 100-114).

Distribution center's infrastructure consists of:

- the board's facilities,
- warehouses and manipulative equipment,
- terminals with loading ground and access road,
- IT networks,
- catering facilities.

In comparison with traditional warehouses, whose only function is storing, distribution centers additionally enable movement of goods (receipt, assorting, assembly, disassembly, packing, loading, etc).

Peculiarity of distribution center depends on numerous factors that could be categorized into three levels.

The strategic level comprises of territorial borders of the area where the center operates, its geographic location and access to transport network (Grondys, Kott, Sukiennik 2017, p. 237-245).

The tactical level concerns structure and size of vehicle fleet, number and type of warehouses as well as the type of the load unit (cardboard, bulk box, pallet, case, container, etc).

Operational level regards completing orders, route planning, warehouse management, scale of receipt and release of goods, etc. (Fechner 2009, p. 292).

The tasks of distribution centers include:

- planning and effective realization of transport links between contractors,
- provision of proper reloading technique and technology,
- providing storage services,

- packing and phytosanitary control provision,
- enabling load completion and disassembly,
- enabling reloading from one means of transport to another.

Distribution center may function in two models of distribution: centralized and decentralized. In a centralized model, the clients are serviced from one site which keeps stocks, i.e from a distribution center. On the other hand, in a decentralized model, mass-produced goods are distributed to final recipients by means of several distribution centers (local and regional) (Hodczak-Sekulska, Redmer 2010, p. 2-4).

Centralized model allows to reduce secure stock level and to maintain high level of customer service at the same time (Brzozowska, Senczyna 2017, p. 178-193). As a result, the cost of keeping the stock, as well as labor and administrative cost declines. The model is not flawless, though (Brzóska, Jelonek 2015, p. 48-55). Cooperation within the framework of centralized model entails additional costs related to implementation of up-to-date IT technologies. What is more, there is much to be said against the distance from the distribution center to the client, which also requires additional financial outlay.

Characteristic feature of the decentralized model is accumulating high level of secure stock, which guarantees high level of customer service. A relatively small distance between a distribution center and a client results in a relatively low transportation cost and makes is possible to reach a wider range of potential clients.

Attracting new clients is a basic factor of most companies' development strategy and it is a prerequisite for success (Seroka-Stolka 2016, p. 60-67). The wider the geographic reach that the center operates in, the more likely it is to acquire more new clients.

Despite the fact that in most cases distribution centers carry out similar functions, they differ considerably. Disparities stem mainly from the requirements imposed on them and from their territorial scope. Alongside with development of Polish economy, it has been endeavored to make distribution centers operate in the largest area possible, with the reach even over 500 kilometers.

Considering territorial borders of the area supported by the center, we distinguish three types of centers:

1. International distribution centers, which are characterized by the following features (Ząbkowski, Jałowiecki 2011, p. 24-25):
   - full and developed logistic infrastructure (transport, warehousing facilities, means of information processing, etc.),
   - integrated information system supporting management,
   - fully developed system of offered logistics services,
   - they have the largest capacity among all the discussed center types and they handle the largest territorial area.
2. Regional distribution centers, characterized by:
   - relatively well developed logistic infrastructure,
   - well developed information system,
   - they offer selected logistics services.

3. Local distribution centers, which are distinguished by the following factors:
   - low level of logistic infrastructure development,
   - offering logistic services of a limited range,
   - among the mentioned types of distribution centers, a local center has the smallest capacity and operates within the smallest territorial area.

Additionally, a specific group among distribution centers are sectorial logistic centers which handle some specific industries or particular enterprises (Skowron-Grabowska 2010, p. 10-12).

One must remember that term 'distribution center' should not be used interchangeably with 'logistic center.' They are two disparate types. As there are many definitions of the logistic center, we must focus on three conditions that such center should comply with. The scope of activities of a logistics center goes considerably beyond distribution, including logistic operations, as it is supplying the manufacturers, e.g. by combining deliveries from many vendors into assembly sets and forwarding them to the manufacturers according to the production schedule (Skowron-Grabowska et al. 2016, p. 7-16).

E. Gołembska describes logistics center as interregional economic entity coordinating warehousing and transporting services over both short and long distances, incorporating flow of information and control system of this entity (Gołembska 2017, p. 102).

S. Abt, in his definition of logistics center, identifies it as a center that logistically coordinates services and transportation over various distances and guarantees interoperating combination of transport and information flow (Abt 2001, p. 102).

I. Fechner, on the other hand, depicts a logistics center as functional-spatial entity with infrastructure and organization, where logistic services connected with goods receipt, their storing, apportion and distribution, as well as complementary services rendered by entities independent of consigner or consignee (Fechner 2004, p. 22).

J. Fijałkowski defines logistic center as "an independent entity, whose aims is providing logistic services and realization of deliveries and distribution within a particular area" (Fijałkowski 2001, p. 14) [own translation]. The author believes that a logistics center consists of the following elements:

- designated area and facilities such as buildings, loading ground, roads,
- technological infrastructure including means of relocating and storing,
- human resources consisting of qualified personnel.

J. Miklińska belives that "a logistics center is a designated (with respect to procedural, organizational and technical relation) area on which infrastructural and suprastructural facilities belonging to organizations of the transport and logistics industry and other specializations are concentrated. Logistics center is a complex object consisting of an easily accessible external and internal infrastructure and suprastructure" (Miklińska 2008, p. 157) [own translation].

In order to understand the nature of the logistics center, it is necessary to pay attention to such characteristics as:

- location at the crossroads of various transport corridors,
- providing logistic services, warehousing services, customs agencies, etc.,
- the fact of being utilized by various enterprises of diverse specificities.

Following the definition, in Poland we have distribution centers and places which aspire to become logistics centers. Logistics centers constitute an important factor of economic development of cities and regions. Organizing, construction and functioning of logistics centers lead to realization of infrastructural investments which entail increased demand for services and construction materials and increase in labor demand. What is more, logistics center plays an important role in the sphere of environmental protection through elimination of nuisance that may result from logistic activities.

Localization of logistics centers

Localization of a logistics center is an essential issue. Taking into consideration enterprises which carry out logistic processes on the basis of a contract, one of the most crucial decision regarding their strategy is the localization of the center. The basic premises of the aforementioned facts are issues related to the following:

- logistics centers are essential link of the supply chain,
- creation of a logistics center imposes incurring high investments costs related to acquisition of a large site and building and equipping the facilities,
- transporting infrastructure influences the decision regarding the location of the center,
- functioning of the logistics center in the supply chain, together with the increased requirements in that domain, determines the basis for creation of comprehensive logistic services.

In order for a center to fulfill its functions, it must be situated in modal points of logistic networks, i.e. at the intersection of transportation routes (rail, overland, air, maritime, etc.). Proper localization ensures effective realization of transport links between contractors. What is more, it enables reloading from one means of transport to another, e. g. from a truck to a railway carriage, as well as performing operations related to storage (Fechner 2004, p. 22).

Planning and development of logistics centers in Poland depends on many conditionings that impact locational decision-making on the regional level.

Economic and social implications for an agglomeration or a city in which a particular logistics center is established is an issue of great importance. They can be of various nature and that is why the question of creating a logistics center should be considered both from the perspective of benefits as well as negative aspects.

Positive aspects of creating logistics centers arise mainly from the fact that their existence in a particular region / agglomeration contribute to attracting new investments, especially those related to manufacturing and commerce requiring logistic services. The centers, as new, not occurring before forms of business activity in the region, force development in its infrastructural system (Jedliński 2006, p. 12-16). Their existence usually entails necessity of implementing changes

in the whole infrastructural system. There is a need for development in road and telecommunication infrastructure, computerization, as well as for network facilitating a fast relocation of people and commodities over significant distances.

Centers of logistic services properly situated within the area of urban agglomerations usually relieve residential areas from heavy vehicle transport. If this is the case, it is the responsibility of the regional government to support these kinds of investment endeavors. Existence of logistics centers may constitute a factor that regulates communication processes in the city / agglomeration / region. For it is in the interest of a functioning logistic center to create conditions for building bypasses, expressways and other elements of communication infrastructure.

As a consequence, so common nowadays in urban agglomerations negative occurrences connected with urban transport may be alleviated. These include the situations when the so called over-concentration, accumulation or congestion becomes an obstacle to a proper functioning of the whole agglomeration (Kaźmierski 2012, p. 103). As a result, logistics centers begin to function as contractor in relation to the city (agglomeration), which may be for the benefit of the city.

The role of a logistics center as "a regulator of communication infrastructure" in relation to the city or agglomeration is crucial also for the economy because it means a number of permanent jobs. Hence, it may also contribute to reducing one of the most important obstacle of the economic development, i.e. unemployment (Kaźmierski 2006, p. 50-51).

Evaluation of the centers' share in realization of development objectives of Bełchatów district

One of the most flourishing sphere of services in the whole Łódź province is logistics. The province is ranked third (right after Warsaw and Upper Silesia) as far as warehousing, logistic and reloading areas are concerned. One of the largest logistic hub of the country is the so called 'golden triangle', i.e. the area between Łódź, Piotrków Trybunalski and Stryków. At present, there are 15 business and logistics parks in the region operating in the fields of commerce, logistics and manufacturing and also many warehousing centers with single entities operating in them. From among all the parks, as many as four are located in the vicinity of the examined Bełchatów district, in Piotrków Trybunalski, and one of the warehousing centers is located in the district.

The market of logistics services in Łódź province is developing mostly in the areas of new sections of motorways, in the vicinity of Piotrków Trybunalski and vicinity of the provincial capital. A big asset of the examined area is cheap workforce, which makes the region competitive and that is why investors are eager to choose it when creating new logistic facilities. In order to analyze the influence of logistics centers on realization of development objectives of particular communes, two matrixes of influence were created. For the purpose of the research, six operational objectives of Bełchatów district were chosen:

- a well-developed economic system based on knowledge and innovation,
- comprehensive technical and road infrastructure in particular communes,
- regularization spatial management / reasonable environmental management,
- activation practices of the commune residents / an increase of employment level,
- improvement of educational provision adapted to market needs,
- increased economic accessibility of the region / good transport connections between the communes and main urban centers.

The first matrix presents different types of logistics centers and their impact on the chosen development objectives of the Bełchatów district, while the second matrix shows influence of the following logistics centers on the realization of the aforementioned operational objectives:

- Logistic City – Piotrków Distribution Center,
- ET Logistik Sp. z o.o.,
- ROHLIG SUUS Logistics SA,
- Prologis Park Piotrków,
- Prologis Park Piotrków II,
- Prologis Park Rawa,
- Prologis Park Stryków.

Table 1. Matrix of the influence of particular types of logistics centers on operational objectives of the Bełchatów district

Type of the logistics center /Strategic objective	Increased economic accessibility of the region / good transport connections between the communes and main urban centers	A well-developed economic system based on knowledge and innovation	Activation practices of the commune residents / an increase of employment level	Improvement of educational provision adapted to market needs	Regularization of spatial management / reasonable environmental management	Comprehensive technical and road infrastructure in particular communes	Sum
International logistics centers	3	3	2	2	1	2	13
Regional logistics centers	3	1	3	3	2	3	15
Local logistics centers	3	1	3	3	2	3	15
Concentrated	3	0	2	1	2	1	9
Modular	3	0	2	1	2	1	9
Dispersed	3	0	3	1	2	2	11
Public-private	1	2	2	0	0	2	7
Private	1	2	2	0	0	3	8
Universal	2	2	3	1	1	1	10
Sectorial (trade)	2	2	2	2	1	1	10
Specialized	2	2	1	3	1	3	12
Sum	26	15	25	17	14	22	

Source: Own study

The utmost importance in realization of operational objectives of the Bełchatów district has the functioning of regional and local logistics centers. Then there are international and specialized logistics centers. Of the least importance and impact on objectives realization is the issue of ownership of the logistics center (private or public-private) as well as spatial integrity (concentrated, modular, dispersed).

Analyzing operational objectives of particular communes of Bełchatów district, one can notice that logistics centers are of the most importance while implementing the following objectives:

- Increased economic accessibility of the region / good transport connections
- between the communes and main urban centers,
- Activation practices of the commune residents / an increase of employment
- Level,
- Comprehensive technical and road infrastructure in particular communes.

By the same token, as far as implementing the following objectives are concerned: a well-developed economic system based on knowledge and innovation; regularization of spatial management / reasonable environmental management as well as improvement of educational provision adapted to market needs, their functioning plays only an insignificant role.

Table 2. Matrix of the influence of particular types of logistics centers located within Łódź province on operational objectives of the Bełchatów district

Type of the logistics center /Strategic objective	Increased economic accessibility of the region / good transport connections between the communes and main urban centers	A well--developed economic system based on knowledge and innovation	Activation practices of the commune residents / an increase of employment level	Improvement of educational provision adapted to market needs	Regularization of spatial management / reasonable environmental management	Comprehensive technical and road infrastructure in particular communes	Sum
Logistic City-Piotrków Distribution Center	3	2	3	2	2	2	14
ROHLIG SUUS Logistic SA	2	2	2	2	2	1	11
Pannatomi Park Łódź East	2	2	2	2	2	1	11
Prologis Park Piotrków	3	2	3	2	2	2	14
Prologis Park Piotrków II	3	2	3	2	2	2	14
Prologis Park Rawa	1	1	1	1	1	1	6
Prologis Park Stryków	2	1	1	1	1	2	8
Sum	15	11	14	11	11	12	

Source: Own study

The influence analysis has been performed from the point of view of each logistics facilities location, type, size, spatial integrity as well as function and services carried out by the center. As the above matrix shows, the biggest impact on realization of operational objectives of the Bełchatów district have the following centers:

- Logistic City – Piotrków Distribution Center,
- Prologis Park Piotrków,
- Prologis Park Piotrków II.

The main reason for such a result is the location of all of those three facilities in the immediate vicinity of Bełchatów district (33 km maximum). Such close location renders the selected centers of great importance in case of:

- Increased economic accessibility of the region / good transport connections between the communes and main urban centers – in this case with Piotrków Trybunalski,
- Activation practices of the commune residents / an increase of employment level – logistics centers offer many jobs and therefore residents of the Bełchatów district can find employment, which results in decreasing unemployment,
- Comprehensive technical and road infrastructure in particular communes – creating logistics centers in the immediate vicinity of Bełchatów district might be a factor that propels public authorities to create new and to improve the already existing road and technical infrastructure.

In the middle of the classification there are Panattoni Park Łódź East and ROHLIG SUUS Logistics SA. These two facilities are located practically in the center of Łódź. Their activity has a great impact on, among others, good transport connections between the communes and main urban centers (with Łódź in this case).

The least importance in realization of operational objectives of Bełchatów district have Prologis Park Stryków, located in Stryków, over 60 km from Bełchatów, and Prologis Park Rawa, which is located over 85 km from Bełchatów.

Apart from the location of logistics centers, what matters are: complexity of offered services (which, among other things, influences the type of the offered positions), form of transport handled by the center (which is of key importance in realization of objectives connected with transport infrastructure) and size of the center (the bigger the facility, the more jobs it offers).

Conclusions

Logistics centers are one of the most important elements influencing economy and they constitute a direct factor of this economy's development. Thanks to their impact on the flow of goods, services and information, they are indispensable in matters of increasing efficiency of logistics channels and they also enable realization of those processes practically in any conditions.

The study shows that the key factors in the region's development are: a dispersed spatial integrity of the particular center and the range of its influence

(local and regional logistics centers of dispersed spatial integrity). On the other hand, the type of the center's ownership as well as centers of the concentrated and modular spatial integrity are of the least importance. Interpretation of the matrixes from the point of view of operational objectives shows that functioning of logistics centers is the most significant when we consider realization of the following operational objectives:

- Increased economic accessibility of the region / good transport connections between the communes and main urban centers,
- Activation practices of the commune residents / an increase of employment level,
- Comprehensive technical and road infrastructure in particular communes.

By the same token, existence of logistics centers plays an insignificant role in realization of the following objectives: a well-developed economic system based on knowledge and innovation; regularization of spatial management / reasonable environmental management as well as improvement of educational provision adapted to market needs. The second matrix presents the results of the analysis of the influence of seven selected logistics centers on the region development. In this case, the most significant for the specified objectives are centers located the nearest to the area that has been examined, i.e. within Piotrków Trybunalski. Such result indicates that one of the factors conditioning the logistics center influence on regional development is its distance from the given region (centers situated in Łódź were listed in the middle of the classification, while those in Stryków and Rawa scored the least points). Interpretation of the obtained data from the point of view of the objectives clearly shows that the selected logistics centers, as in case of the first matrix, impact the increased economic accessibility of the region and activation practices of the commune residents / an increase of employment level the most.

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WPŁYW CENTRÓW LOGISTYCZNYCH NA ROZWÓJ REGIONU NA PRZYKŁADZIE POWIATU BEŁCHATOWSKIEGO

Streszczenie: Centra logistyczne uznawane są za dobre inwestycje ożywiające lokalną gospodarkę i uruchamiające nowe przedsięwzięcia, związane z napływem nowych podmiotów. Artykuł przedstawia istotę działania centrów logistycznych i centrów dystrybucji oraz ich główne zadania i funkcje. Celem publikacji jest przybliżenie definicji i klasyfikacji centrów. Ponadto, odnosząc się do ich lokalizacji, zauważyć trzeba, że potencjalnymi miejscami lokalizacji centrów logistycznych są główne aglomeracje miejskie, punkty mogące obsłużyć kilka województw, wraz z ich głównymi aglomeracjami, wreszcie lokalizacje o dużej koncentracji przemysłu i usług logistycznych. Przykładem takiego rozwiązania jest powiat bełchatowski.

Słowa kluczowe: centrum logistyczne, centrum dystrybucji, lokalizacja, rozwój

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PUBLIC AND PRIVATE FINANCING OF INNOVATIVE ACTIVITY OF ENTERPRISES IN POLAND

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Abstract: The study concerns the problems of financing in innovative activity of enterprises in Poland. The aim of the study is to evaluate sources of financing of innovative activity of enterprises. The sources of finance in innovative activity of enterprises in Poland were described in the perspective of the pecking order theory and financial growth cycle theory. The empirical analysis was based on the statistical data published by the GUS used to evaluate the structure of individual sources of financing in innovative activities of enterprises in Poland. Furthermore, the share of enterprises that obtained public support for innovative activity was also analysed.

Keywords: innovativeness of enterprises, own and debt financing public funds, sources of financing

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Introduction

Innovations are a key element in enterprise development (Zawada et al. 2015, p. 7-8; Kowalik 2015, p. 23-25). However, innovative activity requires engagement of specific financial resources. The insufficient level of the sources of financing drives enterprises to search for other opportunities, such as using debt financing, public support from the state budged or local government entities and EU funds. Less frequently, the enterprises use alternative sources of financing, e.g. venture capital.

The aim of this study is to identify sources of financing of innovative activity of enterprises in Poland from the standpoint of the pecking order theory and financial growth cycle theory. The theoretical fundamentals of the financing concept were brought closer to the reader and the ex-post analysis of the sources of financing for innovative activities in Polish enterprises was presented based on the data of the Central Statistical Office. The research period covered the years 2010-2015.

Financing of enterprise operation – theoretical approach

Searching for optimal solutions in terms of the sources of financing (Rudny 2017, p. 315) for innovative activities of enterprises involves the division of the sources into enterprise's own and borrowed capital (Grzywacz 2012, p. 14-16; Caputa 2016). The enterprise's own sources of financing can be further subdivided into internal, such as profit, and external, acquired through issuing new shares or

stocks. Borrowed capital is mainly obtained from trade liabilities, bank loans and issuing bonds. The enterprise strives for the most beneficial structure of capital in specific conditions, which determines the effectiveness of operating and investment decisions that impact on the profits (Nehrebecka, Dzik-Walczak 2015, p. 42). Effectiveness is viewed as a positive relation between the effects and incurred expenditures.

A particularly optimal source of financing for the enterprise is borrowed capital used after previous depletion of the internal capital sources (Duda 2016, p. 29; Prędkiewicz 2016, p. 111-112). This is consistent with the pecking order theory. The originator of the theory is Myers (Myers 1984, p. 575-592), who defined the usefulness of application of the hierarchy of the sources of financing due to the enterprise striving for reduction in inefficiency of investment decisions and internal preferences of capital resources in the enterprise, mainly equity, profits and sales of negotiable securities. Another item in the hierarchy of financing is external capital, i.e. debt financing using trade credits, bank loans and issuing bonds. Furthermore, the enterprises use convertible bonds and, if necessary, issue shares (Lisińska 2015, p. 207).

The theory of financial growth cycle (Bergerab, Udellc 1998, p. 613-673) is based on the phases of enterprises life, from "plantation" to liquidation. According to the theory, newly created and young enterprises can usually utilize only their own financial resources and/or those owned by their family or friends. Other phases of the development are enhanced with internal capital in the form of investment funds, loan funds and surety funds, investment and working capital loans, EU funds, subsidies and targeted resources (Krawczyk-Sokołowska 2011, p. 142-151). Opportunities for utilizing specific sources of financing depend on the phase of the development of the enterprise size and availability of information necessary for the potential financing institutions (Duda 2016, p. 31; Kokot-Stępień 2016, p. 19).

Financial determinants of innovative activity of enterprises

Explorations of the problems of financing of enterprise activities concern mainly limited opportunities for acquisition of capital and costs of capital. This is especially noticeable with respect to financing of innovative enterprises, which are capital-consuming, risky and produce benefits delayed in time (Borowiecki, Dziura 2016, p. 13; Skowron-Grabowska 2014, p. 84-90).

Innovative activity of enterprises can be financed from public sources and by means of market instruments. Division of sources of financing of innovative activity of enterprises is presented in *Table 1*.

Financial resources from European funds are oriented at entrepreneurs, scientific centres and individual scientists (Malara 2015, p. 5-11). In the nearest future, EU funds will support innovativeness. In order to improve the dynamics of the economic and social growth, the institutions that allocate EU funds prefer support for the projects which show innovativeness. Development of innovations is also stimulated by creation of platforms for creating of new ideas, within which

potential new entrepreneurs can transform their business ideas into an innovative start-up. The program to support innovativeness is managed by the Polish Agency for Enterprise Development (PARP) (www.popw.parp.gov.pl). The group of important institutions related with the Operational Programme – Innovative Economy (POIG) include (www.pi.gov.pl): the Ministry of Development, National Centre for Research and Development, Polish Agency for Enterprise Development, Bank Gospodarstwa Krajowego BGK and the Foundation for Polish Science.

Table 1. Sources of innovation financing

<table>
<tr><th colspan="2">Sources of innovation financing</th></tr>
<tr><th>Public instruments</th><th>Market instruments</th></tr>
<tr><td>Budgetary instruments:
- technological credit
- tax reliefs and exemptions
- obtaining the status of a R & D Center;</td><td>Capital instruments:
- stock exchange (WSE, NewConnect)
- over-the-counter (Venture Capital, Private Equity, Bussines Angels)</td></tr>
<tr><td>EU instruments 2014-2020:
- Intelligent Development (POIR)
- Eastern Poland (POPW)
- Regional Programs (RPO)</td><td>Debt instruments:
- Bank credit
- loans
- bonds
- leasing</td></tr>
</table>

Source: Own study based on (Zembura 2016, p. 114)

As supported by study results, financing of innovative activity of enterprises represents an important barrier to innovativeness (Jasiński 2006, p. 67; Romanowska 2016, p. 31-32; Janasz, Wiśniewska 2012, p. 239-248; Sopińska, Wachowiak 2016, p. 21-22). These examinations emphasize the role of the enterprise's own financing of innovative activities with a relatively low contribution of financing from the state and EU funds. It should be also emphasized that the enterprises which are older, more mature and more experienced can more easily acquire capitals for financing innovations, with particular focus on borrowed capitals.

The main financial instruments used to support innovative activity of enterprises include direct financing of innovative activities of enterprises, especially subsidies and loans (Kluzek 2015, p. 90).

Financing of innovative activities needs a financial engineering which involves a set of public and private capitals. Opportunities for financing of innovative activities are one of the most basic factors that impact on the readiness for introduction of innovative solutions in enterprises (Różański 2015, p. 496; Barcik 2014, p. 6; Kościelniak, Puto 2014, p. 68; Ziółkowska 2016, p. 365-370). Enterprises expect the support in the form of flexible financial instruments which are characterized by low cost, short time of access to the resources and high flexibility in evaluation of potentially financed innovative projects. The particularly limited opportunities are offered for financial support of new enterprises, which do not have credit history yet and assets that can secure the loan products offered by financial institutions. These enterprises, even if they have adequately high

development potential, face substantial difficulties with the access to external sources of financing of projects with innovative character.

Analysis of the sources of financing of innovative activity in Polish enterprises revealed consistency with both the pecking order theory and financial growth cycle theory. Innovative enterprises act based on the pecking order theory i.e. after depletion of internal sources of financing, they use external capital.

The improvement in availability of debt capital for innovative activities of enterprises should translate into their development and increase in incomes. It is important to start activities that allow for implementation of innovative products and financial services which stimulate the increase in opportunities for financing with outside capital.

Financial support from public institutions is also insufficient. Some initiatives (e.g. technology credit) did not attract sufficient interest of enterprises due to the burdensome procedures involved in crediting.

The state policy should be oriented at promotion of innovative initiatives through adequate financial system in terms of taxes, opportunities for support by public resources and access to banking and non-banking loans and credits. It is also necessary to extend the guarantee facility, loan funds and other forms of financing i.e. investment funds.

Assessment of the sources of financing of innovative activity of enterprises in Poland

This part discusses the ex-post analysis of the sources of financing of innovative activity of enterprises in Poland. Based on the data from the Central Statistical Office of Poland, *Figure 1* illustrates first and foremost the financial expenditures incurred in 2010-2015 on innovative activities by enterprises in Poland. Furthermore, the structure of individual sources of financing of this activity was assessed.

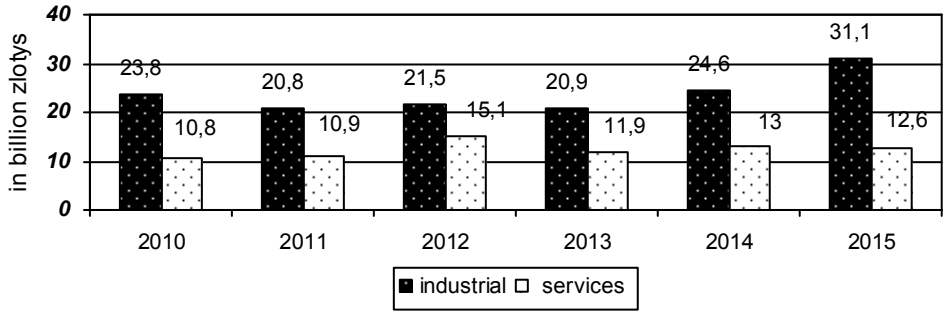

Figure 1. Expenditures on innovation activities in enterprises in Poland in 2010-2015

Source: Own elaboration based on the data of the Central Statistical Office of Poland (www.stat.gov.pl)

Analysis of the data illustrated in *Figure 1* leads to the conclusion that over the years, expenditures on innovative activity ranged from 20.8-31.1 billion zlotys in the case of industrial enterprises. However, their highest value was recorded in 2015. Substantially lower financial expenditures which ranged from 10.8 to 15.1 billion zlotys and showed progression in 2010-2012 and 11.9 to 13 billion zlotys in the following years were found for service-providing enterprises.

The enterprise studied used mainly borrowed capital, which is shown in *Table 1*. This type of financial expenditures dominated in the structure of the sources of financing of innovations in Polish enterprises as it ranged from 67% to 85.7% in the case of industrial enterprises and 62% to 75.2% in service-providing enterprises.

By conducting an evaluation of this, it is possible to come to the conclusion that in the years of 2010-2013 equity capital used for innovations by industrial enterprises were characterized by a downward trend, from 17874.4 billion zlotys to 17897.8 billion zlotys. The greater possibilities of generating equity capital as the principal source of financing innovations by these entities were witnessed in the period of 2014-2015 (17 billion zlotys and 19.3 billion zlotys respectively). The equity capital of service firms ranged between 8.7 billion zlotys and 10.5 billion zlotys in the years of 2010-2015.

Table 2. Expenditures on innovation activities in enterprises by sources of funding in Poland in 2010-2015

IE - (industrial enterpris), SE - (service enterprises)		Expenditures on innovation activities in enterprises by sources of funding									
		own		from state budget		from abroad		bank credits		others	
		in million zlotys	%	in million zlotys	%	in million zlotys	%	in million zlotys	%	in million zlotys	%
2010	IE	17874.4	75.2	270.6	1.2	1879.0	7.9	2089.7	8.8	1686.3	7.1
	SE	9247.6	85.7	52.4	0.5	268.9	2.5	1129.2	10.5	101.9	1.0
2011	IE	15287.2	73.5	265.4	1.3	1763.1	8.5	2153.4	10.4	1330.9	6.4
	SE	9115.7	83.7	118.8	1.1	205.6	1.9	1122.7	10.3	337.2	3.1
2012	IE	15868.7	73.9	418.3	2.0	1550.1	7.3	1422.8	6.7	2240.1	10.5
	SE	10534.3	69.8	2139.2	14.2	956.7	6.4	728.8	4.9	741.0	5.0
2013	IE	14897.8	71.3	330.5	1.6	1897.5	9.1	1456.2	7.0	2318.0	11.1
	SE	9544.8	80.3	234.0	2.0	999.2	8.4	996.6	8.4	125.4	1.1
2014	IE	17032.2	69.3	400.8	1.7	2477.5	10.1	2487.9	10.2	2201.6	9.0
	SE	8709.1	67.0	283.3	2.2	2162.2	16.7	1326.8	10.3	518.6	4.0
2015	IE	19277.3	62.0	626.7	2.1	2181.2	7.1	3574.1	11.5	5440.7	17.5
	SE	9221.6	73.2	202.1	1.7	2110.5	16.8	789.0	6.3	276.8	2.2

Source: Own elaboration based on the data of the Central Statistical Office of Poland (www.stat.gov.pl)

The second important source of financing was bank loans, although in the structure of the sources of financing, service-providing enterprises in 2012 had the lowest value of only 4.9%. This resulted from the fact that an important source of financing in that year was resources (from the state budget (14.2%)). The loans

were less used by industrial companies, with this source of financing accounting for 11.5% of financial expenditures in total in 2015.

In 2010-2013, the foreign resources were characterized by the biggest share in the case of industrial enterprises (ranging from 1.5 to 1.9 billion zlotys, whereas for service-providing companies, this value ranged from 0.2 to 1 billion zlotys). In 2014-2015, the enterprises studied generated similar values of resources from abroad used to finance innovations (2.1-2.5 billion zlotys). However, it can be indicated that for service-providing enterprises, foreign resources represented over 16.7% of financial expenditures in total compared to 10.1% in 2014 and 7.01% in 2015 for industrial enterprises.

Furthermore, the resources obtained from the state budget only for service-providing enterprises exceeded 2.1 billion zlotys in 2012, with their share, as mentioned before, being at the level 14.2%, whereas in other years, they ranged from 0.2 to 0.6 billion zlotys for industrial enterprises (1.6 to 2.1% in the structure of the sources of financing) and 0.05 to 0.2 billion zlotys for service-providing enterprises (1.7 to 2.2%). Evaluation of the public financial support obtained by the innovatively active enterprises in Poland

Public support for innovative activity is analysed in this study over the period of three years. The study revealed the percentage of the innovatively active enterprises that obtained public financial support for the activities performed in this area, which is presented by the data showed in *Table 3*.

Table 3. Enterprises which received public financial support for innovation activities

IE - industrial enterprises SE - service enterprises	Enterprises which received public financial support for innovation activities as the share of innovation active enterprises by number of persons employed in %		Enterprises which received public financial support for innovation activities from national institutions as the share of innovation active enterprises in %					
	IE - industrial enterprises	SE - service enterprises	total		from local authorities		from central authorities	
			IE	SE	IE	SE	IE	SE
2010-2012	25.9	18.7	12.4	10.5	4.9	4.1	8.9	7.6
2011-2013	25.1	22.9	11.6	8.4	3.8	3.4	8.8	6.0
2012-2014	29.4	21.2	13.9	8.9	4.8	3.8	10.4	5.8
2013-2015	27.9	19.8	15.1	13.1	5.8	7.2	10.7	7.2

Source: Own elaboration based on the data of the Central Statistical Office of Poland (www.stat.gov.pl)

In 2010-2012, public financial support for innovative activity was obtained by 25.9% of innovatively active industrial enterprises and 14.7% of enterprises from the sector of services. The biggest value was generated by the indices studied for industrial enterprises in 2012-2014, reaching 20.4%, whereas their highest value for the service-providing enterprises was recorded in 2012-2013. In 2013-2015, public financial support for innovative activity was obtained by 27.9% of

innovatively active industrial enterprises (compared to 29.4% in 2012-2014) and 19.8% of service-providing enterprises (compared to 21.2% in 2012-2014).

Public support consists in initiatives taken by state authorities to support enterprise activities, including innovative activities. The support for innovative activities is connected with providing better opportunities for enterprises to implement innovations by offering preferential and privileged conditions of business activity with respect to market conditions. As shown in the study, public support for innovative activity can be granted by national institutions, including entities of local level (budgets of gminas, poviats and voivodeships), entities of the central level (state budget) and the European Union (including the 7th Framework Programme for Research and Technological Development of the European Union). The study leads to the conclusion that the enterprises which obtained financial support from state institutions utilized the resources more than it was the case for the entities of the central level. For industrial enterprises, the index showed the progression and ranged from 8.8% to 10.7% for service-providing enterprises while a regression from 7.6% to 5.8% was observed in 2010-2014, whereas an increase to 7.2% was observed for the period of 2013-2015. The support from the local level entities was obtained by ca. 3.8-5.8% of industrial enterprises and 3.8-7.2% of service-providing enterprises.

Conclusions

Analysis of the sources of financing of innovative activity in the enterprises in Poland revealed consistency with both the pecking order theory and the financial growth cycle theory. Innovative enterprises act based on the pecking order theory i.e. after depletion of internal sources of financing, they use external capital. Own capital dominated in the structure of sources of financing of innovative activities in the case of both industrial enterprises and service-providing enterprises. However, for the latter enterprises, the figures recorded in 2010-2015 were higher.

The improvement in availability of debt capital for innovative activities of enterprises should translate into their development and increase in incomes. It is important to start activities that allow for the implementation of innovative products and financial services which stimulate the increase in opportunities for financing with outside capital. However, the study showed that the bank loans did not exceed 12%, and they mostly remained at the level of 10%.

Financial support from public institutions is insufficient (the resources acquired from the state budget accounted form 1.6-2.2%). Some initiatives (e.g. technology credit) did not attract sufficient interest of enterprises due to the burdensome procedures involved in crediting.

The state policy should be oriented at promotion of innovative initiatives through adequate financial system in terms of taxes, opportunities for support by public funds and access to banking and non-banking loans and credits. It is also necessary to extend the guarantee facility, loan funds and other forms of financing i.e. investment funds.

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FINANSOWANIE PUBLICZNE I PRYWATNE DZIAŁALNOŚCI INNOWACYJNEJ PRZEDSIĘBIORSTW W POLSCE

Streszczenie: Opracowanie dotyczy problematyki finansowania działalności innowacyjnej w przedsiębiorstwach w Polsce. Celem jest określenie źródeł finansowania działalności innowacyjnej przedsiębiorstw. Dokonano opisu źródeł finansowania działalności innowacyjnej przedsiębiorstw w Polsce w perspektywie teorii wyboru kolejności źródeł finansowania oraz teorii finansowania cyklu wzrostu. Do analizy empirycznej wykorzystano dane statystyczne publikowane przez GUS, na podstawie których określono strukturę poszczególnych źródeł finansowania działalności innowacyjnej przedsiębiorstw w Polsce. Dodatkowo analizie poddano udział przedsiębiorstw, które otrzymały publiczne wsparcie na działalność innowacyjną.

Słowa kluczowe: innowacyjność przedsiębiorstw, finansowanie własne i dłużne, środki publiczne, źródła finansowania

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PACKAGING – FROM NEOLITHIC TO PACKAGING INDUSTRY

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Abstract: The article presents the history of packaging from ancient times to the present day. Its application in particular periods of time and the significance of technical progress in the development of the packaging industry are described. The second part of the articles presents definitions of modern packaging and its functions. Next, the basic statistical data on packaging introduced into the economic terminology in 2012-2015 are presented, and on their basis an analysis of the Polish packaging industry has been made and an attempt is made to predict future trends in the packaging industry.

Keywords: packaging, marketing, logistics

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Introduction

The author's motivation for taking up the subject matter related to the broadly understood area of packaging is the lack of scientific studies in the subject literature, which would contain the description of packaging as well as auxiliary packaging materials in the logistic and marketing concepts. An important issue is also the evolution of packaging from the times of its manufacture in antiquity to modern times, when the marketing and logistic (Skowron-Grabowska 2014, p. 39) concepts present them with numerous challenges.

It is also important that the current economy is described as a networked economy (Nowakowska-Grunt 2016, p. 66) and the importance of a proactive environmental strategy for companies is growing (Seroka-Stolka 2014, p. 10).

The author is, of course, aware that it is impossible to present in this paper all issues concerning packaging and its related problems. It should be added that further work on this topic will continue and the results will be published in the future papers.

Genesis of packaging and packaging industry

At the very beginning, the need to protect precious things and goods was satisfied with what men had in their vicinity and what was associated with the place of their existence. As far as possible, ancient people used the leaves of trees or plants to fold objects into them and then place them in skins or shells (Pelc 2015). As time passed, people gained more and more experience and sought to produce better packaging that would make it possible to protect the value of the

products in use or food kept in them, and/or to cover a longer distance with goods, e. g. which were meant to be exchanged for other products. It should be added here that a breakthrough occurred during the discovery of clay pottery in the Neolithic period.

The Neolithic Age is determined by the time frame depending on the area of its occurrence. In the Middle East it begins at about 8300 BC and in Europe at the end of the 7th and the beginning of the 6th millennium BC. This term was introduced in 1865 by J. Lubbock and originates from the name of a new technique of using stone, which consisted in its use in grinding processes, i. e. smoothing and drilling of holes. Hence this period was also called the age of the polished stone. This period was a stage in the development of culture, in which the man for the first time abandoned the use of natural resources as part of the assimilation economy, such as hunting, hunting, fishing, harvesting for the production economy, which was based on domestication of wild cereals and domestication of animals, as well as firing clay vessels and diversified decoration of those vessels. Weaving with the use of floating looms was invented and there was a development of flint quarrying, far-reaching exchange of various raw materials, river and sea routes were developed (https://encyklopedia.pwn.pl/…). All these factors contributed to the development of products and packaging, which also became a transport-related product. This is evidenced by clay products such as vases, jars, bowls and pots dug out during archaeological works in Mediterranean areas. Every single civilisation tries to develop methods of packing and covering increasingly long distances with products so as to deliver them to their recipients in the best possible condition, which has always been part of the trading process.

Another very important period for the production of packaging was the Bronze Age, thanks to which special tools used in production processes, including packaging, were produced. Decorative elements started to be applied, giving objects their unique distinctive features. The packaging began to be increasingly sophisticated when it received closing solutions or handles[1].

Armed conflicts in Europe in the 18th and 19th centuries were a breakthrough in the perception of the importance of packaging. In 1795, Napoleon Bonaparte promised the prize to a person who would come up with a way of preserving food so that it could be transported along with moving troops over long distances over longer periods of time (Chrzanowska 2017). At the turn of 1809 and 1810, Nicolas Appert invented a groundbreaking method of packaging food by sterilizing foods in a glass jar (https://www.britannica.com/…). Shortly after this discovery there was another breakthrough in packaging when Peter Durand produced a tin can.

The time of the Great Industrial Revolution was a particularly advantageous period for the development of packaging. At that time, comprehensive research began on packaging and its functions related to the storage time of food products and long-distance transport.

[1] The above statements of the Author are the result of an analysis of a number of exhibitions of objects from archaeological excavations.

The early 20th century saw an increase in the mobility of people between Europe and North America, Australia and Asia. More and more products started to have customized packaging that had to meet the handling and storage requirements. Packaging began to play an even greater role in the interwar period. It was then that the companies whose brands and products we know to this day actually began to develop. A summary of a few selected one is given in *Table 1*.

Table 1. List of selected product manufacturers contributing to the development of packaging

No.	Brand	Type of business activity
1.	Nestle	Foods
2.	DuPont	Chemical products
3.	Palmolive	Cosmetics
4.	Henkel	Chemical products
5.	Procter & Gamble	Personal hygiene products
6.	Coca Cola	Beverages
7.	Osram	Lighting

Source: Author's own study on the basis of websites of given brands (www.nestle.com; www.dupont.com; www.colgate.pl; www.henkel.pl; www.us.pg.com; www.coca-cola.pl; www.osram.pl)

These brands are well-known and recognized not only through their products but also through packaging, which is an element allowing the customer to find the right product.

After World War II, packaging gained an increasing importance. All the manufacturers started to compete with one another in winning the customer whom they wanted to become attached to their product and tried to do so through appropriate packaging. In this way, increasing amounts of money were being spent on research and development of packaging, which began to be a separate product, and became inextricably but also inseparably connected with the perception of the product which they were originally supposed to protect. In this way, the packaging industry was created, which introduced innovations and was open to new approaches such as merchandise, marketing, logistics or others (Brzóska, Jelonek 2015, p. 50). Today, packaging is in the area of interest of many sciences, for example technical, legal, and artistic, also including those closely related to environmental protection, which in turn reflect the binding of legal regulations.

Overview of selected definitions of packaging

Packaging is therefore today an object offering many more functions than it did hundreds of years ago. The following part of the paper will present the most important packaging terms, of which the most important is the definition of packaging. At present, there are many different definitions that are presented below in *Table 2*.

Table 2. Selected definitions of packaging

No.	Definition	Source
1.	An item (a set of objects) or material protecting a product against defect (caused by destruction, e.g. by insects, rodents, rain), theft, and changes in its quality during transport, storage, or display.	https://encyklopedia.pwn.pl/szukaj/opakowanie.html
2.	A product which ensures maintaining a certain quality of the packaged products, their adaptation for transport, storage and presentation, and protects the environment from harmful effects of certain products.	Polish Norm – Polska Norma PN-O-79000:97
3.	Article 3 Definitions For the purposes of this Directive: 1. 'packaging` shall mean all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer. 'Non-returnable` items used for the same purposes shall also be considered to constitute packaging	European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste
4.	The packaging in the meaning of the Act is a product, including a non-returnable product, made of any material intended for storage, protection, transportation, delivery or presentation of products, from raw materials to processed goods.	Act of 13 June 2013 on Packaging Management and Packaging Waste Management, Journal of Laws of 2013 item 888 (Ustawa z dnia 13 czerwca 2013 r. o gospodarce opakowaniami i odpadami opakowaniowymi)

Source: Author's own study based on the sources presented in the table

The most comprehensive definition of packaging is presented by Andrzej Korzeniowski. It defines packaging as an object that has a set of the most important characteristics such as (Kisperska-Moroń, Krzyżaniak 2009, p. 187):
- protecting quality of goods during logistics processes and their use,
- protecting the environment against the product,
- simplification of production processes,
- information on the product and how to use it,
- economic aspects.

Development of packaging and packaging industry

Nowadays, the factors influencing the gradual increase in the importance of packaging include (Kisperska-Moroń, Krzyżaniak 2009, p. 187):
- growth of global production,
- advances in technical progress resulting in an increase in the range of products,
- automation of packaging process and packaging of finished products,

- striving to reduce costs of transport and storage processes,
- new sales techniques – self-service,
- aiming to reduce losses resulting from damaged products being returned,
- influencing demand for the product through the form of its packaging.

There is also a growing role of returnable packaging (both damaged and undamaged) (Starostka-Patyk 2016, p. 51; Mesjasz-Lech 2012, p. 42).

An important element influencing the development of packaging was the use of plastics in their manufacture. This trend continues and offers new possibilities for packaging production and applications. Polyester tapes are a good example of this trend since, having better properties, they replace steel tapes used earlier. Their advantage is based on their lower sensitivity to temperature fluctuations and elasticity, and, what is more, they are also resistant to corrosion manifesting itself in the change of colour (when corrosion gives a steel tape the golden-brown colour). *Table 3* below shows the most important groups of packaging materials.

Table 3. Key groups of packaging materials

No.	Type of material
1.	Plastics
2.	Aluminium
3.	Steel
4.	Paper and cardboard
5.	Glass
6.	Wood
7.	Natural materials – fabrics
8.	Ceramics

Source: Author's own work based on the (GUS 2016)

Packaging needs to fulfil various functions of which the most important include the following (Korzeniowski 2009, p. 188; Kisperska-Moroń, Krzyżaniak 2009, p. 187):

- protecting the product against mechanical, climatic and biological damage during transport, storage and handling,
- appropriate shock and corrosion protection of products,
- facilitating transport, storage and handling operations,
- maximum limitation of packaging dimensions and weight,
- rational and economical use of materials, especially materials which are scarce, and the use of environmentally-friendly materials,
- maintaining low costs of packaging,
- giving the packaging its final external appearance.

Properties of packaging result from many functions which they need to serve and they include:

- Production functions: the packaging enables preparation of the required quantity of goods at the beginning of the production process and the collection of the appropriate quantity of goods when leaving production.

- Marketing functions: packaging of a number of products is an important part of a product's marketing strategy that makes the product stand out from competing products. Also in the field of communication packaging - as an advertising medium – can fulfil important functions, e.g. sales promotion (Pfohl 2001, p. 140).
- Usage function: this includes reusing packaging by the purchaser or using it for other purposes. There is an important requirement concerning its manufacturing technology i.e. its manufacture needs to respect the requirements of environmental protection (Ustawa z dnia 13 czerwca 2013 r. …). This necessitates the need for disposal of waste in accordance with applicable legal regulations.
- Logistics functions: packaging makes it easier or even possible to carry out other logistics processes. Logistics functions include: protective function, storage function, transport function, manipulation function, information function (Pfohl 2001, p. 141).

Packaging is subject to a number of requirements that must be met. The most important of these are shown in *Figure 1*.

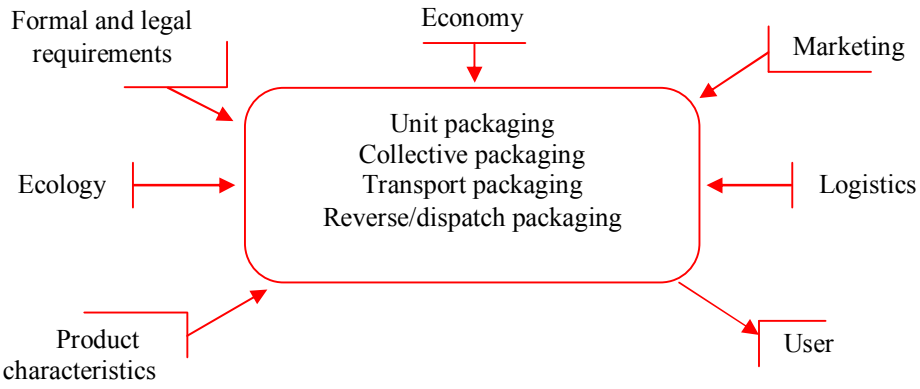

Figure 1. Factors influencing development of different types of packaging

Source: Author's own study based on (Korzeniowski, Skrzypek, Szyszka 2001. After: Pfohl 2001, p. 31)

Packaging is a key element in the logistic packaging process. The packaging process covers all the operations necessary for the containment of goods, from the delivery of empty packages and goods to be packaged to the packing station, through various stages of appropriate packaging, to the preparation of packaged units ready for collection from the packing station (Pfohl 2001, p. 145). Due to the variety of functions performed, packaging has significantly gained in importance, which is reflected in an intensive development of the packaging industry, including Poland. The packaging market in Poland totals approximately 1.4% of the global packaging market, which was estimated in 2013 to be worth EUR 535.7 billion (Wasiak 2015, p. 41).

Since the production and use of packaging is determined to the greatest extent by the material from which it is made, the packaging market is examined taking into account materials from which packaging is made. The market share of packaging made from particular materials in the years between 2011 and 2015 is presented below.

Table 4. Packaging on the market in 2011-2015

No.	Specification packaging	Size of packaging on the market in tonnes				
		2011	2012	2013	2014	2015
1.	Total packaging	4 611 055	4 669 891	4836 423	4 846 080	5 026 055
2.	Plastic	784 474	831 919	895 087	896 321	919 265
3.	Aluminium	86 174	91 670	86 927	87 692	86 587
4.	Steel, of which steel sweet	160 943	156 869	160 371	156 782	171 154
5.	Paper and cardboard	1 419 869	1 493 336	1 566 345	1 567 973	1 579 441
6.	Household glass packaging excluding ampoules	1 078 763	1 056 522	1 068 605	1 027 963	1 105 408
7.	Made of natural materials (wood and textiles)	1 080 832	1 038 029	1 059 088	1 108 601	1 164 199

Source: Author's own study based on (GUS 2016)

As can be seen from *Table 4*, the packaging market in Poland is growing steadily. According to the forecasts by the Polish Chamber of Packaging, at approx. 4-5% of the rate of economic development in the period 2014-2020, it will reach a comparable level to the markets of the well-developed Western European countries (approx. 300 EUR per capita). The packaging industry in Poland fully satisfies the demand of the domestic packaging market, and having overcapacity in the range of 20-25%, it is able to fulfil orders of foreign markets. Unfortunately, the Polish packaging industry is heavily dependent on import of raw materials and product materials, especially in the case of packaging made of plastics, paper and cardboard. Rising prices of those significantly reduce the profitability of packaging companies.

The Polish packaging industry is fully commercialized and privatised. The consolidation process is systematically progressing and it is also being bought out by foreign companies. This applies in particular to the glass packaging industry. Currently, approx. 75% of this industry is in the hands of foreign capital. This also applies to the metal packaging industry, in particular beverage cans and industrial chemicals (Wasiak 2015, p. 41).

Conclusions

Packaging has accompanied the man from the very beginning of his existence. Along with the development of civilization and technology, its importance has grown and increased. Its functions have also expanded from the original protective function to a number of present functions including product marketing and handling and customer information.

As far as the changes in the structure of the packaging market in the coming years are concerned, the development of the plastic packaging segment should be predicted, with flexible, paper and cardboard packaging in particular. Foods packaging will be dominant on the packaging market. The share of packaging for industrial products will slightly increase. Also a slight growth is expected in the pharmaceutical and cosmetics packaging segment. These changes will be related to the development of investments in the economy and changes in the supply system of pharmaceuticals. The packaging market will evolve along the demographic and lifestyle changes and consumption patterns. These changes concern both the type of packaging materials and kinds and ways of packaging. The share of smaller unitized packaging will increase as a result of demographic changes.

Assuming that Poland is developing at a moderate pace, it can be expected that the further development of our domestic packaging industry will follow in – at least – the next few years.

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OPAKOWANIA – OD NEOLITU DO PRZEMYSŁU OPAKOWANIOWEGO

Streszczenie: Artykuł przedstawia historię opakowań od czasów starożytnych do współczesności. Opisano ich zastosowanie w poszczególnych okresach oraz znaczenie postępu technicznego dla rozwoju przemysłu opakowaniowego. Zwrócono uwagę na rozwój funkcji opakowań: od najprostszej, najbardziej podstawowej, jaką była ochrona produktów, głównie żywności, po dzisiejsze, takie jak funkcja marketingowa czy logistyczna. Druga część artykułu przedstawia definicje nowoczesnych opakowań i ich funkcji. Następnie zaprezentowano podstawowe dane statystyczne dotyczące opakowań w latach 2012-2015 i na ich podstawie dokonano analizy polskiej branży opakowaniowej oraz podjęto próbę przewidzenia przyszłych trendów w tej branży.

Słowa kluczowe: opakowania, marketing, logistyka

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INTERCULTURAL NEGOTIATIONS IN SUPPLY CHAINS ON THE EXAMPLE OF POLAND AND GERMANY

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Abstract: Supply chains in the age of globalisation are becoming increasingly cross--cultural. Since, at the lowest level, each supply chain is essentially based on a seller-buyer relationship, negotiations between individual companies play an extremely important role in the functioning of the whole chain. They are particularly difficult if they come from different cultural backgrounds. This is the case for Polish and German companies. The article attempts to analyze the differences between Polish and German business culture based on indicators of Hofstede's four dimensions of cultures. Comparing the indexes of both countries, based on the literature of practical trends, the sources of certain characteristic features of Germans and Poles, which are of significant importance in the negotiation process, were indicated.

Keywords: cross-cultural negotiations, Polish-German negotiations, supply chain negotiations

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Introduction

One of the important features of supply chains in the age of globalisation is their transnational and cross-border nature. This is particularly evident within the EU through a significant impact on the management of logistics processes, including supply chain management (Konopka, Kozerska 2017, p. 1435). This means that the actors in the chain are located in different countries or come from different countries, and even better still – they represent different cultures. Regardless of the size and scope of supply chains, however, the essence of each link is the buyer-seller relationship, and members of the chain need one another to meet consumer expectations (Thomas et al. 2013). It is very often the cooperation of two companies that depends on the success of this relationship. In practice, however, this relationship is based on trust, communication, or the exchange of knowledge (Nowicka 2011; Surowiec 2015). This is how trade negotiations are becoming increasingly important. It results already from the very essence of the supply chain, understood as a flow of information, goods, transfer of ownership rights and money streams (Kot, Starostka-Patyk, Krzywda 2009), that what comes at the crossroads of such two companies is a field for conflicts. These are conflicts mainly related to time, frequency and flexibility of delivery, availability, price and scope of the product, documentation, payment and complaints or returns (Biesaga--Słomczewska 2011, p. 12; Kadłubek 2015). The areas of potential conflict are widened if companies cooperating within the supply chain come from different

cultures (Skowron-Grabowska 2016, p. 11). It turns out that their cultural background causea a number of conflicts in B2B negotiations (Graf, Koeszegi, Pesendorfer 2012, p. 243).

Negotiations against cultural dimensions

Culture-based conflicts might prove difficult to overcome since they are not obvious and often difficult to grasp as opposed to standard conflicts in trade negotiations, for example those on price. They are often hidden and manifest themselves attitudes and in the ways in which problems are solved. It has been found out that culture is almost always revealed during negotiations and is a factor influencing negotiations so much that it is visible even in distance negotiations conducted via the Internet, when negotiating partners do not see each other (Graf, Koeszegi, Pesendorfer 2012, p. 243).

Research on the problems of cultural differences manifesting themselves in negotiations covers two aspects. The first of these, which can be called practical, is based on observations of practitioners and covers the literature of manuals and handbooks providing advice to negotiators. It is a very broad trend offering tips on techniques and strategies, including those concerning contacts with people coming from different cultural backgrounds. The other trend is based on cultural studies and cultural theory. The ambition of the authors of this trend is to scientifically explain cultural differences as sources of conflicts and barriers. In this trend, G. Hofstede's achievements are considered to have been the starting point (Biesaga-Słomczewska 2011, p. 12; Kadłubek 2015), and his cultural model is constantly being improved. Hofstede, a Dutch sociologist, based his model on an analysis of the behaviour of IBM's employees in over 70 countries in the 1960s and 1970s (Hostede 1983, p. 77). Exploring the values of the managers of that international organization, he proposed a theory of the existence of four dimensions of cultures, i.e. power distance, individualism vs. collectivisim, avoidance of uncertaintym, and masculinity vs. femininity dimension, and for all dimensions he introduced indicators on a scale from 1 to 120.

The Power Distance Index (PDI) illustrates the relation to the phenomenon of inequalities between people in different countries and the extent to which individuals accept and perceive social inequalities. The low level of power distance is characterised by countries that are more democratic and willing to consult with the public, while a high ratio is characteristic of countries with authoritarian governments. A high PDI is, for example, characteristic of Asian countries (being the highest in Malaysia at 104), while the index at its lowest is found in Western Europe (the lowest index was noted in Austria at 11).

The index of Individualism (IDV) refers to the strength of bonds between individuals in the society of a given culture. In societies for which individualism is characteristic, the individual has in mind himself/herself and his/her closest family. In societies dominated by collectivism, which is the opposite of individualism, people identify themselves with tightly integrated groups that provide care and protection in return for loyalty. According to Hofstede, there is a strong link

between the wealth of a country and its individualism: individualism is characteristic of wealthy countries, while collectivism exists in poorer countries. In Hofstede's research, the United States achieved the highest individualism rate of 91 and Guatemala – the lowest at 6.

The Masculinity Index (MAS) indicates the dominant characteristics of a society, which can generally be considered to be masculine or feminine. Masculine societies are characterised by competition, assertiveness, materialism, ambition and the need for power, while feminine societies place a greater emphasis on relations and quality of life. In masculine cultures, gender differences in gender roles are very clear in opposition to feminine societies, where both women and men share similar values emphasizing modesty and concern for others. The rate of masculinity is in no way correlated with the wealth of a country. The highest masculinity ratio was recorded in Slovakia (100) and the lowest – in Sweden (5).

The Uncertainty Avoidance Index (UAI) describes how individuals deal with uncertainty in situations which are new, unknown or uncertain for them. The feeling of uncertainty is expressed, among others, by stress and need for predictability that can be satisfied by all kinds of legal regulations and customs. The highest index was recorded in Greece (112), and the lowest in Singapore (8). The cultures with a high UAI do not like ambiguous situations and expect clear structures, while a low index of uncertainty avoidance is associated with willingness to take risks in new and unknown situations[1].

The Hofstede's model is an extremely useful tool for supply chains, specifically for the seller-buyer relationship, in which it can be applied to characterise cultural backgrounds, but also to explain and prevent conflicts. The behaviour of individuals is influenced by the cultural backgrounds from which they originate. The cultural dimensions affect people's behaviour in different circumstances, including economic and business behaviour, or e. g. investment or risk (Czerwonka 2015, p. 281).

Cultural dimensions present in the way in which an individual operates are manifested especially visible in confrontation with a representative coming from a different cultural background, and the supply chain is a place where a specific confrontation takes place. On the one hand, the already-mentioned conflict of price-based and other-than-price terms and conditions of sale appears; and on the other hand, there appear two different culturally-conditioned approaches to such conflict. Representatives from different cultural backgrounds sit down at the negotiating table with – what often proves to be – different goals. Some people, as it is customary in their culture, want to sign a contract as soon as possible, while others want to meet the guests and get to know them, and they would like to establish relations without a hurry, the contract is just an episode for them. Should there also be other differences between the parties to the negotiations that do not result from their cultural differences, e. g. the generation gap, temperaments, company size and culture, then it turns out that reaching an agreement could be very difficult.

[1] Description of the Hofstede's indexes based on (Czerwonka 2015).

Not without significance in these contacts are also stereotypes or prejudices concerning other cultures or nations, which as generalisations may become a factor negatively affecting attitudes towards the business partner. Should we add to all this the pressure on customer service, cost pressure, competition factors that exist in today's supply chains, it may turn out that despite the existence of common objectives negotiations may not be successful.

Polish and German business culture in the context of Hofstede's research

Germany and Poland are an example of two cultures that often interact with each other in terms of economy. Germany has been Poland's most important trading partner since 1990 and is ranked first on the list of our suppliers and customers (GUS 2016). In 2016, the value of Polish-German economic exchange is reported to have exceeded EUR 100 billion for the first time in history. This result is a confirmation of the fact that Poles and Germans achieve success in negotiations. However, it needs to be assumed that the success has not been achieved without difficulty, as Poles and Germans, despite their geographical proximity and common history, are culturally very different. The practical literature on negotiations abounds in publications with very detailed, reliable and valuable guidelines for both sides which are meant to help to avoid misunderstandings and frustration among business partners due to their cultural differences. The indexes suggested by Hofstede above provide an explanation of the reasons for these differences.

PDI for Poland amounts to 68, whereas for Germany it is 35. Thus, both countries differ significantly in the value of this index and thus in relation to social inequalities and distance to power. Against the background of other countries, Poland is characterised as a country where social inequalities are accepted, while Germany is characterised by a low level of acceptance of social inequalities and at the same time a smaller distance to power.

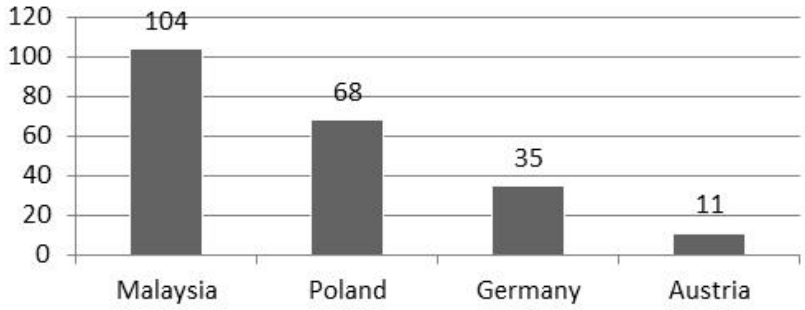

Figure 1. Poland's and Germany's PDIs compared to two countries with extremely low and extremely high PDIs

Source: Author's own study on the basis of G. Hofstede (https://www.hofstede-insights.com)

At the rate of PDI at 68, Poland is in a group of hierarchical societies, in which the hierarchical order is commonly accepted and every person has their place in such hierachy, which does not need any special explanation. In this particular kind of society, hierarchy in an organization is perceived to be reflecting inherent inequalities and centralization of power, and authority is common here. Subordinates expect to be told what to do and the ideal boss is a considerate autocrat. Unsuprisingly, Germany, which is highly decentralised and with a strong middle class, is not among the lower power-distant countries (index at 35). Co-determination rights are comparatively extensive and need to be accounted for by the management. The meeting style which is common is conducive to direct and participative communication where control is disliked and leadership is challenged to show expertise and best accepted when it's based on such.

The degree of acceptance of social inequalities and the attitude to power are the factor that determines human behaviour to a large extent, and this is particularly evident in B2B business relations. It manifests itself in attitudes such as division of competences, rather flat organisational structures of companies, the use of titles and surnames in conversations, but also in terms of interpersonal professional contacts. This is the reason why Germany, as a low PDI country, avoids using titles as opposed to Poles. In Poland the titles are used in the place where Germans use the surname and it is usually rounded up, which is surprising for Germans. Germans are also more democratic in parent-child, superior-subordinate, officer-soldier or professor-student relations (Wojciechowski 2007, p. 10).

This may be important in the negotiation process and, depending on the negotiating situation, may lead to some kind of surprise or misunderstanding and consequently - reluctance. The German side may be surprised by excessive respect with which some of the people in the delegation of a Polish partner are treated, while Poles may feel that they are disrespeced when their titles are omitted.

The relationship to power is also revealed in the way in which the rules of the game are understood. Wojciechowski mentions two approaches. The first one originates in the Prussian tradition, which is based on the belief that the rules of the game, i.e. laws and regulations, are respected because they have been established by a reasonable and sensible authority. In the other approach, coming from the Anglo-Saxon culture – also known as the fair play approach, observance of the rules of the game is guided by the principle "I treat others as I myself would like to be treated". As Wojciechowski points out, in everyday behaviour of societies and individuals these traditions occur simultaneously, but with different intensity. Germany's adherence to the rules is guided by authoritarian thinking in 90% and in 10% by fair-play rules. In terms of compliance to the rules Poles reveal – 40% of authoritative thinking, 40% of fair play, and shrewdness in 20% (Wojciechowski 2007, p. 10).

The way in which the rules of the game are understood results to a large extent from the history of both nations. Germany is a country that has always cultivated the tradition of federalism, which has been based on equal cooperation between smaller states, and which has been able to operate thanks to a rational and logical exchange of information. The bases of the German system rely on loyalty,

punctuality and honesty. Unlike Germany, Poland has always sought to create a strong central state and national symbols, which is still visible today. The history shows that Poles fought for independence for a long time (Grünnefeld 2005, p. 3).

The authorities were at that time identified with the enemy who the Polish fought against, and officials and regulations established by the enemy needed to be circumvented. This difference might well be a source of conflict in the supply chain between Polish and German companies. It seems that the most problematic approach to formal issues, such as observance of regulations and rules of the game, how contracts and agreements are formulated, as well as compliance with them and respect for them, may appear to be the most problematic in the buyer-seller relationship.

In the case of Germany, the individualism rate was 67 and 60 in the case of Poland, thus it can be considered that both societies are characterised by quite strong individualism.

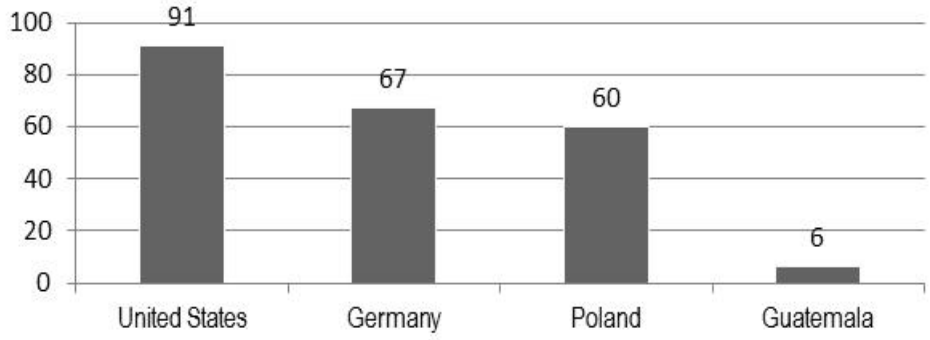

Figure 2. Poland's and Germany's IDVs compared to two countries with extremely low and extremely high IDVs

Source: Author's own study on the basis of G. Hofstede (https://www.hofstede-insights.com)

The lower IDV in Poland is surely a legacy left behind by the socialist era in which the idea of collectivism dominated and managed to take root quite well in the Polish mentality, so that until now it has played a quite significant part, which fortunately is losing its intensity. In this respect, therefore, Polish and German business partners can expect understanding and cooperation between business partners in the supply chain. It should be noted, however, that there is a certain difference here as some of the characteristics of Poles differ from individualism and move towards collectivism.

Hence, for Polish business partners the main source of information are personal contacts and relationships. People-to-people relations are often more important than task implementation, and some clients are sometimes treated better due to the very fact that they belong to a particular group or organization, or due to their acquaintance with a particular person. IDV is strongly correlated with the prosperity of a given country. The large degree of individualism is characteristic of wealthy countries and the low level of individualism is found in poor countries.

With regard to Poland and Germany, this thesis is confirmed, and Germany, as a country more economically developed than Poland, is characterized by a higher individualism rate.

Poland and Germany make a similar case in relation to the MAS index, which for Poland amounts to 64, and for Germany – 66. The indexes achieved by both countries are in the middle range – from 61 to 80, and thus, they are societies with a medium degree of masculinity.

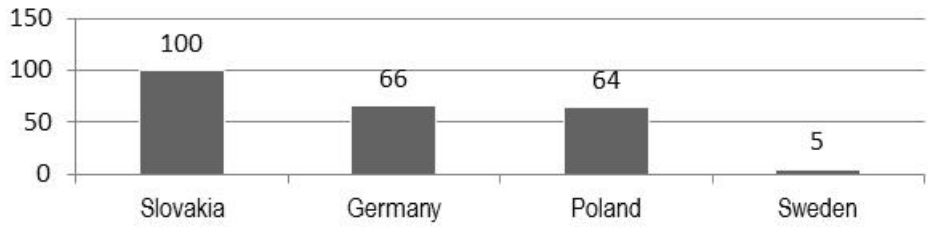

Figure 3. The MAS indexes for Poland and Germany compared to two other countries with an extremely low and extremely high MAS indexes

Source: Author's own study on the basis of G. Hofstede (https://www.hofstede-insights.com)

Both countries are therefore reported to be halfway between a high and low-indexed society, although there are certainly some differences. Thus, German people, especially German managers, are attributed "hard traits of personality" such as composure, self-control, punctuality, orderliness and love for order although these values appear to have been experiencing a certain crisis recently. They are also characterized by will power and ability to concentrate. This gives German managers an advantage in negotiations. On the other hand, Poles have a greater talent for improvising and tendency to come up with solutions which depart from established rules (Wojciechowski 2007).

The masculinity dimension of society is very well defined by the characteristics that are extremely important in individual negotiating situations. This area in relation to individuals can be often modified by very individual personal characteristics. In the case of a buyer/seller relationship, these characteristics may play such an important role that, depending on the arrangement/structure of the people involved in the negotiations, they may meet with the other party's disapproval and hinder the conclusion of an agreement. Therefore, the selection of negotiators who have personal qualities that are welcome by the other party plays a vital role here.

The last of the discussed indicators – UAI – is 65 for Germany and 93 for Poland.

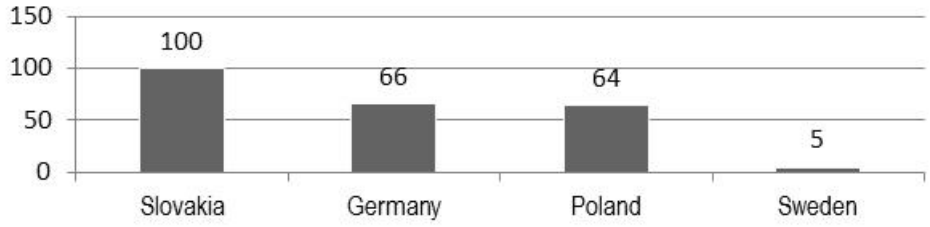

Figure 4. Poland's and Germany's UAIs compared to two countries with extremely low and extremely high UAIs

Source: Author's own study on the basis of G. Hofstede (https://www.hofstede-insights.com)

Germans are not very comfortable when it comes to uncertainty as they tend to plan everything carefully in order to avoid it. Germany has the society that relies on rules, laws and regulations. Germany wants to reduce its risks to the minimum and proceed with changes step by step. Poland lands the index at 93 in this dimension and thus has a very high preference for avoiding uncertainty. Countries exhibiting high Uncertainty Avoidance maintain rigid codes of belief and behaviour and are intolerant of unorthodox behaviour and ideas. In these cultures there is an emotional need for rules (even if the rules never seem to work). For them time is money and hence, people have an inner urge to be busy and work hard. Precision and punctuality are the standards to be followed, and while innovation may be resisted, it is security which is an important element in individual motivation.

In business contacts, this means that Poles have a stronger need for clarification and formal procedures than Germans, and innovativeness of employees is sometimes constrained. Poles have a strong need to be occupied and adhere to the principle that time is money. They also make more conservative investment decisions than Germans. In the supply chain negotiations there may be misunderstandings between German and Polish partners in this field, particularly with regard to joint decisions requiring investment or signing contracts.

Conclusions

The use of the Hofstede indexes in the above analysis shows that Polish and German companies are quite culturally different in two out of four areas and when representing the links in supply chains negotiations, they might encounter many problems that have not only a purely economic or organisational bases. Creating a lasting relationship in this configuration must begin with showing empathy and patience, which over time will be likely to turn into mutual trust. This can only happen through good communication, good dialogue, and creating the win-win type of negotiations (in which each party is satisfied) from the very beginning. Many negotiators and entrepreneurs are aware of this and both sides gain more and more experience in this area by adopting appropriate attitudes during negotiations, which undoubtedly enables closer cooperation in supply chains.

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NEGOCJACJE MIĘDZYKULTUROWE W ŁAŃCUCHACH DOSTAW NA PRZYKŁADZIE POLSKI I NIEMIEC

Streszczenie: Łańcuchy dostaw w dobie globalizacji stają się coraz bardziej międzykulturowe. Ponieważ na najniższym poziomie każdy łańcuch dostaw opiera się zasadniczo na relacji sprzedawca – nabywca, negocjacje pomiędzy poszczególnymi przedsiębiorstwami odgrywają niezwykle ważną rolę w funkcjonowaniu całego łańcucha. Są one szczególnie trudne, jeśli pochodzą z różnych środowisk kulturowych. Dotyczy to firm polskich i niemieckich. W artykule podjęto próbę analizy różnic między polską i niemiecką kulturą biznesową w oparciu o wskaźniki czterech wymiarów kultury Hofstede. Porównując wskaźniki obu krajów, na podstawie literatury trendów praktycznych, wskazano źródła niektórych cech charakterystycznych dla Niemców i Polaków, które mają istotne znaczenie w procesie negocjacji.

Słowa kluczowe: negocjacje międzykulturowe, negocjacje polsko-niemieckie, negocjacje w łańcuchu dostaw

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LOGISTICS IN THE CITY MANAGEMENT SYSTEM

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Abstract: The dynamic development of cities and the growing needs of the inhabitants make the issue of the functioning of people and goods movement more important than ever. With the increase in the intensity of the streams of the city, the cities themseles are beginning to face increasing problems arising from this phenomenon. The increase in the number of inhabitants, the increasing consumption are factors that greatly influence the flows of goods taking place within the city. This illustrates the apparent difficulty in coordinating the flow and ensuring that they are as efficient as possible. This is due to the progressive changes in the way people live, the decentralization of society, the development of urban transport hubs and the increasing importance of transported goods.

Keywords: city logistics, transport

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Introduction

The operation of urban centers means that it is possible for one to move independently of the reasons that cause communication needs and the way of transportation. With the increasingly tightening of economic links within cities, and in particular large urban agglomerations, the importance of urban logistics has increased. It is considered as a tool for solving problems in the functioning of highly urbanized areas such as urban agglomerations. Although theoretical foundations of logistics knowledge, such as urban logistics, are not yet sufficiently developed, many definitions and concepts have already arrived.

City logistics area

Urban logistics has grown on the basis of well-known, basic logistic principles, and defining activities. The city logistics as a relatively new field of science has a central role in the management of the city, which creates a transparent structure for the organization and management of the city's resources. It distinguishes the following areas, which are the subject of research and the need for logistic solutions:

- supply of water, gas and heat,
- organization of passenger and goods transport,
- issues of transport and disposal of municipal waste and waste water treatment,
- shaping the transport links of the agglomerations with the logistic system of the macroregion (Tomaszewska 2001, p. 105).

The implementation of these aspects in the field of city logistics should ensure optimum conditions for the city functioning, taking into account the costs, performance and services of urban entities. There are three streams of flow:
- material stream,
- financial stream,
- information stream (Tundys 2008, p. 84-88).

Logistic infrastructure can also be distinguished in city logistics (Szałucki 2008, p. 151), where information systems for logistics activities are created. In addition, urban logistics covers the metropolitan emergency area in crisis situations, ie calamities, accidents.

If the city is considered to be an area integrating the economic space of activities related to the management of physical and human resources, it is the task of urban logistics to combine into one controllable system the activities of those economic entities which are responsible for ensuring the proper conditions of this economy (Quak 2011, p. 34).

Urban logistics can be defined as the whole process of managing the flow of goods, cash and information according to needs and in order to develop the city and taking into account the problem of environmental protection, assuming that the city is a social organization aimed at meeting the needs of its customers – the inhabitants of the city (Nowakowska-Grunt, Chłąd 2015, p. 137). The needs of the city are the sum of the needs of its inhabitants, which include such elements as:
- mobility needs,
- the need to work, to produce and generate,
- the need to acquire goods and services,
- need for information (Szołtysek 2009, p. 57-59).

Entities operating within the city form the flow of material goods, cash and information in the process of their needs satisfaction. The task of urban logistics is to optimize these flows. This task is about identifying, analyzing and creating the hierarchy of the needs of the entities that make up the logistics system (Pabian 2013, p. 4-5). The stage should be identified by flows generated during the implementation of the needs, and then finding solutions to optimize those flows and methods, the means of its implementation, which serves the model of tasks and points of interest of urban logistics as presented in *Table 1*.

Taking on the starting point of known logistics definitions developed by the Council of Logistics Management, urban logistics can be defined as the process of planning, executing and controlling flows, ie:
- flows initiated outside and directed to the city,
- flows initially launched in the city and directed outside,
- flows passing through the city,
- flows within the city (Witkowski 2010, p. 120-122).

Table 1. Model of tasks and areas of interest in urban logistics

Urban logistics	
Decision making factor	***Objective***
SUPPLIERS – manufacturing and service companies, industry, wholesalers, hypermarkets, service points.	Availability of node points, profitability and development, availability of information, reduction of operating costs.
SUPPLIERS OF TRANSPORT AND LOGISTIC SERVICES – transport and forwarding, post, courier services, passenger and road passenger transport.	Access to linear and point infrastructure, development and profitability, access to information, cost reduction.
MUNICIPAL AUTHORITIES – local government institutions.	City development, ecological social objectives (optimal satisfaction of residents' needs, protection of the environment), Access to linear and point infrastructure.
RECIPIENTS OF GOODS AND SERVICES – retailers, small shops, individual customers.	Availability of products and services, availability of infrastructure - mobility, access to work, information and living in the city.

Source: Own study based on (Szołtysek 2009)

The accompanying information flows aim at meeting the needs of urban agglomerations in the field of quality of management, quality of life and development. In urban logistics it is proposed to replace the existing, uncoordinated arrangement of various types and intensity streams with a coordinated system, oriented on the entities operating in the city and its inhabitants, and consequently on the development of the city. We are talking about the integrated management of transport systems in the city. This is to eliminate chaos, the pathologies of urban traffic and prevent transport paralysis. Logistics in relation to the city points to the need to ensure optimum productive and spatial and existential-spatial relationships of a transport character, taking into account costs, the type of services provided to individual entities, assuming the economic and ecological development of the agglomeration. In the definition of urban logistics developed by the Council of Logistics Management, the adjectives “efficient” and “economically efficient” (Cisowski, Szymanek 2006, p. 15) are not automatically and unconditionally attributed to flows. They should not always be used, but of course they mean to be used where possible. Flows should be economically efficient, but above all, the welfare of the population and the development of the city should be taken into account (Stabryła 2000, p. 115).

The conditions under which logistical processes are implemented should take into account the socio-economic objectives, while economic operators respecting them take reasonable decisions and maximize their profits (Kowalik 2015,

p. 22-34). It is important to note the potential of urban logistics optimization, which outlines both definitions. The first is urban logistics as a process of optimizing all storage and transport activities undertaken by businesses in the city, taking into account the environment of these processes, transport congestion and energy consumption, in a market economy environment (Świerczek, Szozda 2014, p. 381). The second definition presents urban logistics as the point of delivery assumed for optimizing the city system in terms of planning, control and monitoring of all economically, ecologically, technologically and socially conditioned processes in the system. In other words, urban logistics refers to all these activities conditioned on the movement that make up the daily life cycle of the city as an economic, social and cultural space. It is the basic instrument of efficient management of the life of the modern city, including the reliable functioning of its technical infrastructure and transport system (*Figure 1*).

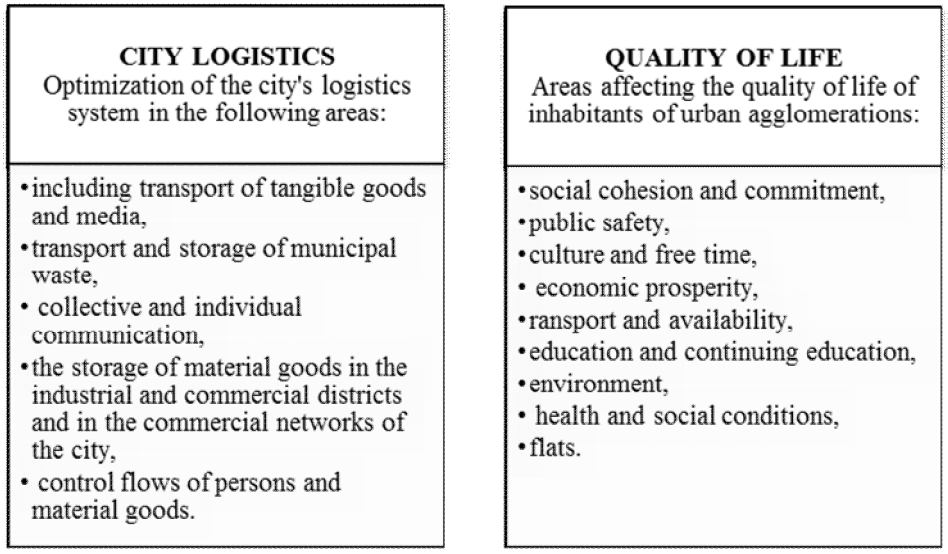

Figure 1. Connection of urban logistics and quality of life

Source: Own study based on (Szymczak 2008)

Applying the principles of urban logistics contributes to achieving both economic and ecological goals. The aim of urban logistics is to combine the activity of all economic entities and institutions operating within the city with a mobility aspect and to manage this network of events in a way that ensures the desired level of quality of life and management in the city at a minimal cost but meeting ecological requirements in the same time (Brzozowska, Grabińska, Imiołczyk 2016, p. 57-58). Coordination of activities also includes the appropriate organization of community services provided to economic entities and the population (Grondys, Kott, Sukiennik 2017, p. 237-245). In such a general objective, one can distinguish a new aspect in a comparison with the logistics of enterprises:

- economic purpose,
- ecological focus,
- social purpose (Chandler 1962, p. 35).

Objectives of urban logistics

The long-term objectives of urban logistics should be to ensure the development of the city in a coordinated arrangement of all three dimensions (Sukiennik 2012, p. 40). Once you have set the objectives, you can ask yourself how to implement them and what the decision makers and planners must know (Siuta-Tokarska 2013, p. 21). Urban logistics is a field of interdisciplinary and multidisciplinary knowledge. This means that as a matter of interest it covers many areas of science and practice. The most important are: computer science, economics and technology (Strzelczyk 2013, p. 118). It should be emphasized that all these issues are useful to the city and their knowledge and practical use contributes to its development. In particular, this applies to areas such as urban planning, urban economics, spatial planning, transport policy, traffic engineering, road transport, environmental policy (Witkowski 2008). These functions include economic, logistics and transport, or information and communication functions (Chłąd 2011, p. 144). Due to the fact that the cities differ from each other, the functions performed by each of them are also varied (*Figure 2*).

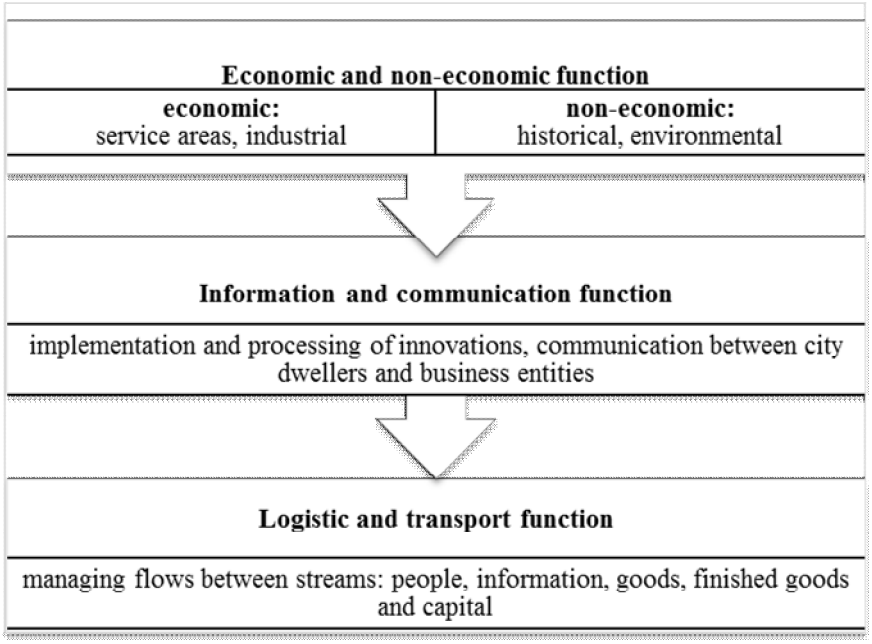

Figure 2. Basic functions performed by modern cities

Source: Based on (Tundys 2008)

Each of these specific features is a reflection of the innovative approach to urban traffic engineering, which is referred to as urban traffic engineering logistics. It is in fact a set of interdependent, infrastructure harmonizing and organizational activities in managing the flow of people, cargos and information flows (Ziemkiewicz 1999, p. 107-110):

- in the right place and in the channelized distribution,
- in due time and without delay,
- in the right technology and with the appropriate measures and their compatibility,
- with constant monitoring of the reliability of distribution, demand and supply in terms of quantity, quality, availability and space and customer expectations,
- taking into account the substitution of services in the area of logistics engineering urban traffic,
- competitive, with alternative infrastructure and stream organization,
- at the expense satisfying the manufacturer and the distributor and meeting the consumer's (customer's) expectations,
- at the acceptable global, social costs,
- with respect to ecological, material and information safety (Taniguchi, Thompson, Yamada 2013, p. 49-60).

In this context, the following planning and organizational actions should be taken into account:

- organization of the total necessary transport of the city to service people, cargos and services with logistic means and instruments,
- use of logistical thinking in the field of competing demands on limited resources of downtown space,
- space planning perceives the problems and boundary conditions of bulk traffic, their distribution and transit in the area of dense investment to increase the overall usable value,
- the study of the supply of personnel and equipment in high development density areas by organizations and technical means of transport systems and using methods of planning and mathematical logic,
- to optimize the transport in and out downtown of all goods and services required by the social and individual economic needs,
- transport in and out of urban areas, with the means of passenger transport and economic traffic,
- planning, organizing, controlling transport system in both directions, inside and outside the city,
- land transport organization, taking into account the requirements of loading and unloading companies, cargo recipients and transport units, and in accordance with individual and public traffic (Gołembska, Czajka, Tomaszewska 2001, p. 27) (*Table 2*).

Table 2. The needs and implications of transport in the city

Passenger transport	*Transport implications*
Food	Transportation of people to shopping centers
Ensuring jobs	Transport of people between workplaces and places of residence
Education	Transportation of people to schools, educational institutions
Residential	Infrastructure of roads, car parks, garages
Traffic	Transport infrastructure, roads, pedestrian walkways, parking lots, cycle paths, public transportation system, bus stops
Healthcare	Arrivals to the facilities, parking lots, airfields, emergency and rescue systems
Urban safety and comfort	Signage system, evacuation routes, snow removal, cleaning systems, noise protection, collision-free intersections, transport education

Source: Own study on the basis of (Tundys 2008)

In the theory and practice of urban logistics, the concept of urban logistics is often seen as an individual system. Urban logistics is also a tool for solving problems of highly urbanized areas, ie the agglomerations to which the city belongs, so the term is considered to be the most appropriate (Kiba-Janiak 2015, p. 24). The aim should be to effectively control the flows of all resources within the city between its subsystems and meet the expectations of city users at an appropriate level (Krawczyk 2004, p. 44). You can also define the aspect of organizational, technical and economic tasks. Organizational determinants influence the shape of logistics structures, the formulation and implementation of the appropriate strategy, and the identification of basic links within the city. When defining system tasks, organizational, economic and technical considerations should be considered (Szczepanik 2016, p. 159). This position allows you to adopt appropriate planning, control and control solutions.

Conclusions

Urban logistics, determined by its interdisciplinary character, has a huge impact on economic, ecological and social factors that improve the city, leading to improvement of the quality of life of its inhabitants. The consequence of such a state is the application of logistic management methods, rules and procedures in the management of the urban system. Among these needs, the requirement of smooth movement and the possibly free access to a wide range of consumer goods as well as resources are of particular importance. Hence, the implementation of transport

functions of the city is currently one of the key challenges for decision-makers. Taking into account all the objectives of interested entities present in cities and linking them with the tasks that logistics management imposes on them is a complicated and very complex process. This is mainly due to the fact that problems and time-consuming implementation of appropriate solutions improving the flow of goods are recognized.

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LOGISTYKA W SYSTEMIE ZARZĄDZANIA MIASTEM

Streszczenie: Dynamiczny rozwój miast oraz rosnące potrzeby mieszkańców sprawiają, że problematyka funkcjonowania procesów przemieszczania osób i towarów z każdym rokiem nabiera jeszcze większego znaczenia. Wraz ze wzrostem intensywności strumieni przepływów miasta zaczynają borykać się z coraz poważniejszymi problemami wynikającymi z tego zjawiska. Przyrost liczby mieszkańców oraz wzrastająca konsumpcja są czynnikami, które bardzo intensywnie wpływają na przepływy dóbr odbywające się w obrębie miasta. Przedstawia to widoczną trudność w zakresie koordynacji procesu przepływu oraz zapewnienia jego możliwie najwyższej sprawności. Nakładają się na to postępujące zmiany stylu życia mieszkańców, decentralizacja aktywności społeczeństwa, rozwój miejskich węzłów transportowych oraz wzrastające znaczenie przewożonych ładunków.

Słowa kluczowe: logistyka miasta, transport

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LOGISTICS INFRASTRUCTURE OF MOTORWAYS IN SUSTAINABLE DEVELOPMENT OF A REGION

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Abstract: In this article the author develops the concept of logistics, linear infrastructure of car transport in Czestochowa region. He also discusses whether current state as well as possible future changes of this infrastructure meet the requirements of sustainable development concept. The basis for the study is an analysis of secondary sources related to the issues (quarry library, factual and cartographic inquiries) as well as non-formal interviews (directional) with the representatives of the authorities responsible for managing infrastructural objects as well as organs responsible for the planning of infrastructure's further development. Observed general patterns can be considered as representative also for the other areas of Poland.

Keywords: car transport, infrastructure, region, sustainable development

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Introduction

A specific and positive trend can be observed in today world. It relates to ecology and environment protection. Scientists have warned for years about catastrophic consequences of negligence in this sphere. However, it seems that only recently people have begun to treat this problem with due seriousness. More and more people are beginning to lean toward the idea of an absolute need to protect the environment. This results is the introduction of a wide range of solutions aimed at stopping the progressive degradation of the environment. For example car manufacturers have been imposed with emission limits, companies are persuaded to design and implement effective business models (see more: Brzóska, Jelonek 2015, p. 48-52), smart grid networks are introduced (see more: Zawada, Tomski, Kucęba 2015, p. 44-45), preparers of all kinds of green ideas are honored with prizes, innovative ways of managing institutions and organizations are also promoted (Nowicka-Skowron, Stachowicz, p. 59).

One of the key concepts which underlies the need to take determined actions in order to safeguard ecological balance in the world is sustainable development. It represents a process of change in which the use of natural resources, the direction of technological development as well as all institutional changes must be made in such a way as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs (Skawińska, Sobiech-

-Grabka, Nawrot 2010, p. 129). Although the balanced approach is still not a dominant concept in the realities of economic and social life (Brzezinski 2016, p. 58), it will become increasingly important in time and with the progressive degradation of the state of environment.

For this reason appropriate measures should be taken just now, in order to assess areas of socio-economic reality from the point of view whether they are already ecological and if they may become sustainable in the immediate future. One of the areas that need to be considered is logistics infrastructure of car transport. The author evaluates and describes it based on studies carried in form of quarry library, analysis of secondary sources as well as direct, informal interview with selected representatives of authorities responsible for managing the infrastructural facilities as well as developing plans for their further development. Author primarily concentrates on linear infrastructure (natural as well as artificial routes with all the necessary equipment for the movement of means of transport where materials and products are also often sent directly[1]). He also wonders whether prospects for the development of this infrastructure are promising in the view of sustainable development concept's requirements.

Area of study

There are many trends in nowadays logistics. Without doubt one of them relates to the way of carrying out logistics studies (Nowicka-Skowron 2017, p. 59). More and more often there are based on studies made up in a region. The concept of a region is often defined as a geographically homogeneous area, or a grouping of areas with a uniform tradition, inhabited by communities having certain common elements. "These communities are striving at the same time to preserve this specificity in order to achieve social, cultural and economic progress" (Tomaszewski 2007, p. 49).

Traditional way of determining the extent of such way defined area, as well as making it's description, begins with ethno-genetic designation of historical conditions (administrative and tribal structures, migrations), sociological aspects (e.g. self-definition of the group), cultural phenomena, specific linguistic and geographical features, including the characteristic features of the natural environment and terrestrial physiology. At the same time, however, it seems that in the process of regionalization of a particular area, the author should not be restricted solely to traditional factors. In order to correctly define the boundaries of the region, many other criteria should be taken into account (Damrosz 1987, p. 35-36).

Therefore, precise determination of the scope of Częstochowa region is not an easy task and could be itself elaborated as a subject of extensive elaboration. For the purpose of this paper, the author defines spatially Częstochowa region using a linear (administrative) delimiter. This approach seems to be justified in the light of the considerations of researchers who claim that the political divisions, have significant influence on the establishment of ethnic boundaries.

[1] Roads of car transport are artificial what means that they haven't been created by the nature. Have been created from the ground by human (see more: Ficoń 2009, p. 60).

Considered region is identified with Częstochowa county (along with Częstochowa city itself). Mentioned agglomeration is not a part of the terrestrial district of Częstochowa (constitutes a separate territorial unit – city district) (Antoniewicz 2000, p. 31; Grajewski 2008, p. 485), but at the same time headquarter of county authorities are set there (Rozporządzenie Rady Ministrów z dnia 7 sierpnia 1998 r. …). Moreover, Częstochowa district closely cooperates with Częstochowa city in the form of strategic partnership. This alliance is conditioned by the specific position of both units and specific solutions, resulting from this, regarding the location of county units carrying out tasks for all the citizens. In counties surrounding the cities with the county rights most of the public services at the county level are usually organized in a city, so *de facto* in a separate district. Such situation also occurs in the case under consideration.

Częstochowa country has been formed in 2009 as a result of the last one administrative reform of Poland. The most visible effect of the reform, which entered into force on 1 January 1999, was the reduction of the number of voivodeships – from 49 to 16 (Niziołek 2008, p. 79-84). At present Częstochowa county is the largest in Silesia state and one of the largest in the scale of whole country. Its area is about 1519 km^2, which accounts for almost 12.4% of the area of Silesian province (Starostwo Powiatowe w Częstochowie 2012, p. 2). The population reaches almost 135 thousand people.

County headquarter is located in Częstochowa. This city is located in southern Poland, on the bank of Warta river, on the northern edge of Silesian Voivodship. Modern Częstochowa is a federation of villages, in the old times independent settlements, which with the development of the city were absorbed naturally or attached by administrative decisions (Czekaj et al. 2002, p. 31). Area of city is about 160 km^2 and the population approaches 250 thousand people. This means that Częstochowa is the second largest city in Silesia and one of the 15 largest cities in the whole country (Bednarek, Latacz, Piwowarczyk 2009, p. 7). This is an important industrial center (Kruczek 2005, p. 160). Among more than 26 000 REGON – registered business entities, there are many involved in the manufacture of flat glass, chemicals, automotive parts as well as food processing (Michalski, Dobrzyńska 2011, p. 32). Częstochowa is also educational, tourism and cultural center (Pucek 2006, p. 25). Scientific potential of the city is confirmed by the presence of several higher schools, among which the largest and best – known one is Czestochowa University of Technology.

Study results

The linear, road transport infrastructure is connected with specific environmental hazards. First and foremost, motor roads are artificial and occupies a relatively large area. In addition, the vehicles moving through them are the source of atmospheric pollution as well as noise. Traffic accidents occurring on the streets lead to hazardous material leaks into the soil (see more: Huderek-Glapska 2014, p. 83-90). Moreover, the amount of waste from wrecked vehicles is increasing. Too

high density of low-quality motorways in the region, which do not guarantee safe driving, should therefore be considered in terms of environmental concern.

In the Częstochowa region, however, there are roads well adapted to car traffic. *Figure 1* constitute an overview of a network of car routes in Częstochowa region that meet the technical and utility requirements of national roads. It confirms that the western part of Częstochowa county is characterized by a much higher degree of development of the national road network than its eastern part. The only national road running through the eastern part of the county (from south to east) is the single-track road no. 46. This road is moving from Częstochowa to Kielce and Radomsko area, passing through the municipalities of Olsztyn, Janów and Lelów (Sobel, Świtycz, Krasoń, Ociepa 2006, p. 16). More precisely, the course of route 46 in the eastern area of the county can be described by determining the consequence of more significant towns which are situated on the route. Theese are: Olsztyn, Janów, Logoczanka, Lelów, Nakło. Cartographic query results in the conclusion the length of this road 46 section is closed with a number of 50 kilometers.

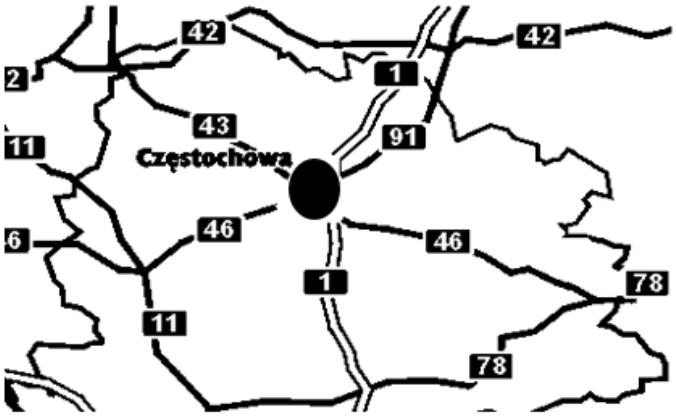

Figure 1. National car roads in Częstochowa county

Source: Own elaboration on the basis of (Starostwo Powiatowe w Częstochowie 2016, p. 18)

The only two-lanes road in Częstochowa county is located in its western part. Fragment of National Road no. 1 runs from the north of the county to its south. In the area under consideration DK1 runs along towns: Wikłów, Kruszyna, Zawada (about 25 km), and crosses the area of the city of Czestochowa (aleja Wojska Polskiego), somehow dividing it into two parts: eastern with such districts as Raków, Dąbie, Zawodzie, Rząsawy, Aniołów as well as western where is located, among others, downtown with old town[2]. In its further course south, it runs through or near such towns as: Wrzosowa, Poczesna, Koziegłowy, Zawada (≈ 15 km) (*Mapa. Polska* ..., 2013, p. 14). Total length of the DK1 road in county is about 40 km.

[2] The cartographic query shows that the area of Częstochowa located on west from aleja Wojska Polskiego is larger than its eastern part.

National Road number 1 should be considered in terms of the most important communication corridor in the district. This is due to two facts:

- access to the Częstochowa fragment of the road and further continuation of the ride according to its course, allows the inhabitants of the county, depending on the direction, direct access to important provincial cities: Łódź (in the north) and Katowice in the south,
- when meeting the requirements for dual-carriage national motorways class: GP (major of accelerated traffic), it makes it possible to have a relatively smooth, reliable as well as fast journey (*Table 1*).

Table 1. Essential technical requirements for GP-class national roads

Parameter type	Parameter value	
Minimum distance of buildings from the outer edge of the street[1]/road [m]	Built-up area	Outside built-up area
	10.0	25.0
Minimum allowed distance of a tree trunk from the edge of the road [m]	3.0	3.0
Minimum permissible distance of a pavement from the edge of the road [m][2]	5.0	
Distance of the lane border from the outer edge of an earthwork or ditch [m]	0.75	
Minimum width of the road within the boundaries and boundary lines of the road GP [m]	40.0	-
The minimum permissible road width in the demarcation lines [m]	-	35.0
Statutory defined lane width [m]	3.25[5]	3.5
Height of the gauge [m][3]	4.7 / 4.5	
Width of possible shoulder [m]	1.5 - 2.0	
Allowable single vehicle axle load on the road surface [t][4]	115.0 / 100.0	
Acceptable types of roads' nodes	Collision free, partially collision free	
Links to other categories of roads	Connections with second class roads (exceptionally "L") as well as with higher class roads	
Additional technical conditions	Necessity to use a transverse slope allowing the flow of water, the possibility of applying serpentines with the preservation of detailed requirements, constructional guidelines and parking belts in case the surrounding causes a demand for parking spaces	

Equipment	X[5]	X + two roadways in one direction, emergency journeys to the roadway intended for the opposite direction, located not more than 4 km apart (excluding bridges and tunnels)

[1] Street means a section of a road running through a built-up area. Street within the road is in the same category as this road.
[2] Pavements may be placed directly at the edge of the road provided, however, that a separation fence or other mean of traffic safety is used.
[3,4] Lower value is used in case of road repair or it's reconstruction.
[5] "X" – set of equipment components consisting of: drainage and lighting equipment (where necessary), facilities as well as equipment for the service of traffic participants, technical equipment for traffic leading (including traffic lights), other road infrastructure (sewer lines for road dewatering, special purpose underground equipment, etc.).

Source: (Rozporządzenie Ministra Transportu i Gospodarki Morskiej z dnia 2 marca 1999 r. ...; Ustawa z dnia 21 marca 1985 r. …)

The national road network in county is complemented by one- lane roads, including:

- road no. 91 running from Częstochowa through the communes of Rędziny, Rudniki, Kłomnice, north towards Radomsko, and further up to Piotrków Trybunalski (less than 30 km).
- road no. 46, running from the border of Częstochowa town through the Blachownia commune area, towards Lubliniec (approximately 6 km).

In addition to the already mentioned urban section of E75 (length = approx. 16 km), other national roads are also running along the streets of the Częstochowa, capital of county (*Table 2*).

Table 2. National roads running through the area of the city of Częstochowa

Road number	Sequence of streets	Succession of districts	Length
43	św. Rocha, al. Jana Pawła II	Grabówka, Lisiniec, Śródmieście	≈ 8 km
46	Przejazdowa, Główna, św. Barbary, św. Augustyna, Pułaskiego, Bohaterów Monte Cassino	Bańbor, Gnaszyn, Kawodrza, Śródmieście, Stradom	≈ 9 km
Joint part of DK43, DK46	św. Jadwigi	Podjasnogórska	≈ 1.9 km

Source: Own elaboration on the basis of cartographic query

Statistically, this results in the fact that 0.08 km of national road is present on 1 square kilometer of the area of the characterized region. In comparison, this ratio for the entire voivodship is 0.09 and for the whole country: 0.06 (Alke et al. 2013, p. 17).

Figure 2. Voivodship, county and communal roads against national roads in the region

Source: Own elaboration on the basis of (Starostwo Powiatowe w Częstochowie 2016, p. 19)

In addition to the national routes in Częstochowa region, there is an extensive network of voivodship, county and communal roads (*Figure 2*). They cannot be considered as fully prepared for safe and eco- friendly traffic. At the same time, however, they allow access to almost every aggregation of population in the region. The total length of the county and communal roads is 1698.1 km of which the roads with a hard surface are 1443.3 km (Urząd Statystyczny w Katowicach 2010, p. 306).

Forecasts on the development of the characterized infrastructure seem positive in the near future. Częstochowa is located in the transport corridor of the A1 motorway, being part of the Trans-European Transport Corridor (direction: North-South), linking the Scandinavian countries (Sweden, Norway and Finland) to the south of Europe. In 2016 the construction of a section of this road (linking Częstochowa with Pyrzowice town) has begun. The A1 motorway, like other roads of this type, should be a source of unquestionable advantage for the inhabitants of the region. The advantages of high speed routes are pointed e.g. by: D. Jones and M.K. Jha. These are, among others: increased transport speed and, what is more important, increased safety which translates into less danger to the environment (Jones, Jha 2010, p. 124).

Conclusions

The existence of appropriate transport infrastructure in the region determines to a large extent the effectiveness of the business entities operating there (Mendyk 2009, p. 170-172). In this context, it is welcomed that the transport infrastructure in the region of Częstochowa seems to be appropriate to handle car transportation

processes. At the same time however, there are many environmental hazards linked with the road transport infrastructure, which were presented in the second chapter of the work. They are not too severe only in the case of the highest categories' roads. Than it is glad to know, that present structures meet the requirements foreseen for the efficient operation of car services. The prospects for infrastructure development in the future are also quite promising. All the plans and projects, put forward by the relevant institutions, allow users of motor vehicles to assume that the state of infrastructure will develop in the near future. The emergence of new high-profile roads as well as modernization of already existing sections is undoubtedly in line with the assumptions underlying the concept of sustainable development.

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LOGISTYCZNA INFRASTRUKTURA DRÓG SAMOCHODOWYCH W ZRÓWNOWAŻONYM ROZWOJU REGIONU

Streszczenie: W artykule rozwinięto tematykę liniowej infrastruktury transportu samochodowego w regionie częstochowskim. Rozważono, czy stan obecny tej infrastruktury oraz perspektywy jej dalszego rozwoju odpowiadają postulatom sformułowanym w koncepcji zrównoważonego rozwoju. Podstawę opracowania stanowi analiza źródeł wtórnych dotyczących rozpatrywanej tematyki (m.in. kwerenda bibliograficzna i kartograficzna). Posłużono się także wynikami badań przeprowadzonych w formie wywiadu swobodnego (ukierunkowanego) z przedstawicielami organów odpowiedzialnych za tworzenie planów dotyczących rozbudowy infrastruktury w regionie. Ogólne wnioski z rozważań mogą być rozpatrywane w kategoriach reprezentatywnych także dla innych obszarów kraju.

Słowa kluczowe: infrastruktura, region, zrównoważony rozwój

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ORGANIZATIONS BETWEEN ENVIRONMENTAL AND ECONOMIC CONCERN: HOW EMPLOYEES' PERSONAL VALUES AND ATTITUDES PREDICT PREPAREDNESS OF ORGANIZATIONS FOR ENVIRONMENTAL PROTECTION

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Abstract: Paper examines the relationships between personal values, attitudes and companies' devotion of resources to environmental protection based on the value theory and sustainability theory. We proposed a model for the study of the influence of personal values on attitudes toward concerns for environment and economics results, and influences of both considered attitudes on preparedness of organizations for devotion of resources to environmental protection. The model was tested with structural equation modeling approach, using data collected from 600 employees in organizations and 300 post-graduate business students as future employees in Slovenia. The results indicate that universalism and benevolence, for employees, and benevolence and security, for students, are strong positive predictors of concern for the environment. Security and tradition, for employees, and tradition, for students, are strong negative predictors of concern for the environment. Concern for the environment is strongly positively correlated with the allocation of resources to environmental protection, for both groups. Results about employees' and students' concern for environment are in line with previous studies. But contradictory to the expectation, in both groups concern for economic results showed a weak positive impact on regarding the level of the devotion of resources to environmental protection.

Keywords: Attitudes, Organizations, Environmental concern, Environmental Protection, Economic Concern, Personal Valuese

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Introduction

Numerous solutions have emerged for improvement of organizations' responsibility towards the nature and community in which they operate (Korten 2009; Laurent 2003; Waddock, Bodwell 2007). Modern organizations try to fulfill demands and requirements of natural, social and economic environments with utilization of sustainable responsibility concepts like sustainable development, corporate social responsibility (CSR), and pro-environmental behavior (Alibeli, Johnson 2009; Glavas, Kelley 2014; Gonzalez-Rodriguez, Diaz-Fernandez, Simonetti 2016).

Responsible working and behavior of organization is there in forefront of studies in environmentalism, management and behavior theory (Stern 2000; Waddock, Bodwell 2007; Wang et al. 2016). Environmentalism theory focused its attention on conceptualization of responsible business through development of models for utilization of responsible working in organizations (Dunlap, Gallup, Gallup 1993; Adams 2008; Davis, Whitman, Zald 2008; Gonzalez-Rodriguez, Diaz-Fernandez, Simonetti 2016). Management theories are focused on consideration of responsible traits and behavior (Blackburn 2007; Peet, Hartwick 2009; Glavas 2016). For instance, Carroll (Carroll 1999) emphasized that responsible actions go beyond the explicit pecuniary interest of the firm.

Behavior theory investigates links between behavior of individuals, groups or organizations and responsible business; it established that employees' behavior is a valid predictor for organizations' responsible behavior (Stern 2000; Raven, Berg 2003; Rego, Pina, Polonia 2017). For instance, Dietz et al. (Dietz, Fitzgerald, Shwom 2005) established that single variables of managers' behavior differently influence organization's CSR. On the contrary, Friedman (Friedman 1962) denied any meaning of environmental goals for managers' behavior, and Balabanis et al. (Balabanis, Phillips, Lyall 1998) reported that environmental initiatives are negatively related with managers' perception about firm's performance in top British companies. But rare behavior studies widely investigate influences of managers' attitudes on managers' direction, implementing plans and motivating people in utilization of socially responsible initiatives (Fransson, Garlin 1999; Schwartz 2006; Ralston et al. 2014).

Given the research emphasis on grand challenges, the need for a broad theoretical understanding of the influence of managers' behavior becomes all the more critical, particularly if one aims to introduce new cognitions into practical, strategic and policy advice (Brzóska, Jelonek 2015, p. 48-55).

To give an analytical flavor to our exposition, we begin with highlighting three gaps of socially responsible behavior challenges that have been emphasized in prior studies.

First, we focused our attention on managers' behavior, unlike previous studies, which are primarily oriented on employees' or organization's behavior (Schultz, Zelezny 1999; Waddock, Bodwell 2007; Wray-Lake, Syvertsen 2010). The focus on behavior of specific groups of stakeholders eliminates general behavior's arbitrary or incidental influences, reduces behavior variance and increases the conceptualization and validity of findings about managers' SR behavior (Glavas, Kelley 2014; Wang et al. 2016).

Second, we add to previous investigation the conceptualization of managers' SR behavior as a multidimensional construct. Multidimensionality of the concept is based on broader consideration of two groups of relationships in values-attitudes-behavior chain (Stern, Dietz 1994; Rego, Pina, Polonia 2017). In the first phase we considered effect of 10 groups of personal values on managers' attitudes toward concerns for environment and economic results (Schwartz 2012; Glavas, Kelley 2014; Skowron-Grabowska, Mesjasz-Lech 2016). In the second phase, we considered how managers' attitudes shape preparedness of organizations for

devoting resources to environmental protections as considered characteristics of a socially responsible behavior (Thompson, Barton 1994; Glavas 2016, Seroka-Stolka, Nowakowska-Grunt 2012).

Finally, in our study we investigate how the present personal values and attitudes of managers and students – i.e. as future managers, shape preparedness for devotion of resources to environmental protections in Slovenian society (Alibeli, Johnson 2009; Gonzalez-Rodriguez, Diaz-Fernandez, Simonetti 2016). This enables us to detect the current situation in organizations and predict development trends in devotion of resources through opinions of future managers.

Literature Review

Modern literature investigations and business practices include various solutions for improving the relationship between business of organizations and their care for protection of natural environment (Carroll 1999; Aguinis, Glavas 2012; Wang et al. 2016). The current studies focused their intention on two main research areas.

The first group of authors includes social (e.g., economic and business) sciences that focus on relationships between organizations and their natural environment (e.g., green business concepts and theories) (Davis, Whitman, Zald 2008; Rego, Pina, Polonia 2017). We use their cognitions about the existence of a variety of business goals, needs for balance, human impacts on business, and mezzo organizational theories (Blackburn 2007; Peet, Hartwick 2009; Mullins 2013).

The second group includes authors from sociological sciences (e.g., philosophy, psychology, sociology), which focus on the environmental conservation and concern of enterprises for the natural environment (Adams 2008; Glavas, Kelley 2014). This group is mostly based on environmentalism as a science, philosophy, and social movement (Haq, Alistair 2011; Wray-Lake, Syvertsen 2010). We use their cognitions about protecting natural resources and ecosystems, the need for the development of suitable behavior, and the influence of personal values/culture/ethics/norms (VCEN) on the environmental protection. Most of these studies exclude economic performance (Frank, Karp, Rush 1996; Stern, Dietz 1994; Schultz, Zelezny 1999; Dahlsrud 2008).

Researches on values, including their influence on work and behavior of enterprises, are widely considered in the management literature. Authors have examined the methodological repertoire for the consideration of values (Hofstede 2001; Rokeach 1973; Schwartz 1994, 2012). We adopted a questionnaire from the Schwartz's (Schwartz 1992, 1994) value survey, focusing on environmental questions (Frank, Karp, Rush 1996; Schultz, Zelezny 1999). The characteristics of values and their role and importance for enterprises are based on the cognitions of Rokeach (Rokeach 1973) and Schwartz and Bilsky (Schwartz, Bilsky 1987). We consider the basic cognitions about the influence of values on work and behavior from England (1967), Posner and Munson (Posner, Munson 1979), and Ralston et al. (2014).

Research studies in this field primarily confirm the impact of personal values on environmental issues. For example, Axelrod and Lehman (1993), Kemmelmeier et al. (Kemmelmeier, Krol, Hun Kim 2002), and Dietz et al. (Dietz, Fitzgerald, Shwom 2005) recognized and defined a set of important factors influencing pro-environmental behavior. Stern (Stern 2000) identified several important factors that influence behavior orientation. Additionally, Stern and Dietz (Stern, Dietz 1994), Karp (Frank, Karp, Rush 1996), and Schultz and Zelezny (Schultz, Zelezny 1999) recognized personal values as an important source defining relationships with the environment.

The literature identifying the influence of personal values on the selected environmental issues makes it evident that:

- Either the abbreviated scale of the Schwartz value measurement (Schultz, Zelezny 1999; Stern, Dietz 1994) or the full range of values (56 values) is used (Frank, Karp, Rush 1996);
- The impact of values on environmental issues is primarily examined by using single and multiple regression (Schultz, Zelezny 1999; Aoyagi-Usui, Vinken, Kuribayashi 2003), although more recently these relationships have been tested using structural equation modeling procedures (Nordlund, Garvill 2002; Oreg, Katz-Gerro 2006);
- The mainstream surveys focus primarily on student populations (Schultz et al. 2005; Alibeli, Johnson 2009; Cordano et al. 2010), whereas other researchers have used nationwide random samples that have also included employees (Aoyagi-Usui, Vinken, Kuribayashi 2003; Nordlund, Garvill 2002); and
- The majority of studies used the environmental paradigm, developed by Dunlap and Van Liere (Dunlap, Van Liere 1978) and revisited by Dunlap et al. (Dunlap, Gallup, Gallup 1993), to try to measure general environmental attitudes.

For our study, we used the following fundamental research terms. Concern for the environment was generally defined as people's awareness of problems regarding their environment and their support to solving the recognized problems (Dunlap, Gallup, Gallup 1993; Schultz, Zelezny 1999). Concern for economic results can be most generally defined as worrying foremost about the economic results of enterprises' workings and behavior (Baumol, Litan, Schramm 2007; Buchanan, Huczynski 2010). Personal values can be defined as attitudes that guide our behavior and workings (Rokeach 1973; Schwartz, Bilsky 1987).

Hypotheses

According to the cognitions from the relevant literature (Rokeach 1973; Schwartz, Bilsky 1987; Dunlap, Gallup, Gallup 1993; Baumol, Litan, Schramm 2007; Wang et al. 2016), and to the purpose of our study, we postulated the following four hypotheses:

H1: Personal values significantly influence one's attitudes toward concern for the environment.

H2: Personal values significantly influence one's attitudes toward concern for economic results.

H3: Increasing concern for the environment is positively associated with devotion of resources for the environmental protection.
H4: Giving priority to the economic results is negatively related to the devotion of resources for environmental protection.
H5: Increasing concern for the economic results is negatively associated with devotion of resources for the environmental protection.

The hypotheses concerning the impact of employees' personal values on their attitudes towards concern for economic results and the environment were kept very general as we go beyond the prevalent presupposing which single values predict which concerns (Frank, Karp, Rush 1996; Schultz, Zelezny 1999; Shafer-Landau 2007). Thus, we consider the impact of all groups of personal values on economic and environmental concerns. This approach can contribute to a more comprehensive understanding and consideration of the research problem.

Research Design

Sample and procedure

Participants – The sample for this study includes 600 employees working in Slovenian organizations and 300 post-graduate business students at the University of Maribor, Faculty of Economics and Business (FEB) Maribor, Slovenia. Employees' data were obtained through computer-assisted telephone interviews (CATI) with employees in Slovenian organizations in 2017. Altogether, approximately 1000 organizations were contacted and 600 usable answers were obtained from their employees. From each organization maximum one answer was used. Data for business students were collected during a management course at FEB in spring 2017. All participants in our survey participated voluntarily.

Sample characteristics – By briefly outlining the demographics of our sample, we can postulate the following. The average age of employees is 33.3 years and students' one 21.9 years. Among employees, 68.8% are females and 31.2% are males; among students, 69.8% are females and 30.2% are males. Employees have on average 11.22 years work experiences. Regarding employees' education, 53.6% have bachelor degree, 42.2% high school, and the rest have higher degrees – i.e. master's or doctorate degrees. All students finished high school. Regarding employees' current position in the organization, 67.1% are non-supervisory staff while 20.2% are first-line managers, 11.0% are middle managers, and 1.7% are upper-level managers. In terms of organizational size, 61.1% of employees work in organizations with fewer than 50 employees, 28.2% work in organizations having between 50 and 250 employees, and 10.7% work in organizations with more than 250 employees. The employees, who responded to the survey were from organizations operating in agriculture, mining, forestry and fishing (1.7%), construction (2.5%), manufacturing (24.0%), transportation, communication, utilities (9.7%), the wholesale and retail trade (19.2%), finance, insurance, and real estate (14.2%), services (9.0%), public administration (9.7%), healthcare (1.7%), and other (8.3%) industries.

Measures

Personal values – To measure personal values, the Schwartz value survey (SVS) was used (Schwartz 1992, 1994), where respondents rate each of 56 personal values using a 9-point Likert-type scale, ranging from "opposed to my values" (-1) to "of supreme importance" (7). According to the Theory of basic human values (Schwartz 1992, 1994, 2012), we used in our empirical study 10 dimensions of values, which are based on 56 single values. This structure of values was validated on worldwide samples (Schwartz 1994, 2012) as well as on Slovenian samples (Nedelko, Potocan 2013; Ralston et al. 2014). The considered groups of values are: power ($\alpha = 0.670$), achievement ($\alpha = 0.678$), hedonism ($\alpha = 0.674$), stimulation ($\alpha = 0.601$), self-direction ($\alpha = 0.526$), universalism ($\alpha = 0.750$), benevolence ($\alpha = 0.687$), security ($\alpha = 0.569$), tradition ($\alpha = 0.589$), and conformity ($\alpha = 0.568$). Regarding the multidimensional structure of personal values (i.e., 10 latent variables in the model), we presuppose that 10 measurement variables reflect 10 groups of values in a reliable manner in the selected Slovenian sample, since the obtained reliability coefficients (outlined in brackets above) are similar to those in other studies using SVS for surveying personal values (Nordlung, Garvill 2002; Egri et al. 2012; Ralston et al. 2014; Glavas 2016).

Employees' attitudes and behavior

The items chosen to measure employees' attitudes toward concern for the environment, attitudes toward concern for economic results, and behavior regarding the devoting of resources to environmental protection were adapted from a scale of 25 items aimed at measuring corporate responsibility (Ralston et al. 1993; Furrer et al. 2010; Ralston et al. 2014). A 9-point scale was used, ranging from 1 (strongly agree) to 9 (strongly disagree). We used a factor analysis (in SPSS for Windows) to detect the considered factors.

The items selected to measure employees' attitudes towards concern for the environment were: a) prevent environmental degradation caused by the pollution and depletion of natural resources (EN 1); b) adopt formal programs to minimize the harmful impacts of organizational activities on the environment (EN 2); and c) minimize the environmental impacts of all organizational activities (EN 3) (Dunlap, Gallup, Gallup 1993; Thompson, Barton 1994; Cordano et al. 2011; Wang et al. 2016). Cronbach's α for this scale was 0.675.

The items used to measure the employees' attitudes about giving priority to the economic results (over the other considered aspects of corporate social responsibility) were: a) no committment to ethical principles (EC 2); b) ignore environmental issues when jobs are at stake (EC 3); and c) agree that ethical responsibilities may negatively affect economic performance (EC 4) (Waddock, Graves 1997; Kemmelmeier, Krol, Hun Kim 2002; Blackburn 2007; Kitzmueller, Shimshack 2012). Cronbach's α for this scale was 0.589.

Finally, the items used to measure employees' behavior regarding the devotion of resources to environmental protection were: a) devote resources to environmental protection, even when economic profits are threatened (DEV 1); b) voluntarily exceed the government's environmental regulations (DEV 2); c) pay

the full financial cost of using energy and natural resources (DEV 3); and d) only proceed with activities where environmental risks can be fully evaluated and controlled (DEV 4) (Westing 1996; Glicken, Fairbrother 1999; Cordano et al. 2010; Glavas 2016). Cronbach's α for this scale was 0.640.

Comparable researches in this field (Dahlsrud 2008; Alibeli, Johnson 2009; Aguinis, Glavas 2012) illustrate a Cronbach's α falling between 0.539 and 0.572 for three constructs related to concern for the environment. Schultz and Zelezny (Schultz, Zelezny 1999) reported a Cronbach's α coefficient between 0.47 and 0.81; after modification, the reliability coefficient for all 14 nations in the sample was 0.70. In this field of research, Nordlung and Garvill (Nordlung, Garvill 2002) and Oreg and Katz-Gerro (Oreg, Katz-Gerro 2006) reported similar values of Cronbach's α (the lowest $\alpha = 0.52$ and $\alpha = 0.50$, respectively). We can summarize that our Cronbach's α values for the latent variables are satisfactory, given the exploratory nature of our research.

Research Model

According to the postulated hypotheses the model for this research consists of 13 latent variables. Since these variables cannot be observed directly, several manifest variables serve as indicators of the underlying construct they are presumed to represent. The proposed model evaluates how employees' personal values – i.e. considered through 10 groups of values, influence employees' attitudes toward concern for the environment and concern for the economic results. Furthermore, the model evaluates how the concern for the environment and concern for economic results influence the corporate's devotion of resources to environmental protection. Since the latent variables are not assumed to be perfectly predicted by associated constructs, the dependent variables include a residual (Z1, Z2, and Z3). Therefore, the question of the plausibility of the multidimensional structure of the latent variables must be investigated. The hypothesized model is outlined in *Figure 1*.

Data analysis – In our examination we go beyond the single and multiple regression analysis approaches usually utilized in previous studies in this field (Frank, Karp, Rush 1996; Schultz, Zelezny 1999; Cordano et al. 2011; Frynas, Yamahaki 2016). We used structural equation modeling (SEM) techniques to examine the impact of personal values on the concern for the environment, concern for the economic results, and the corporate devotion of resources for environmental protection. Using SEM enables us to comprehensively estimate the multiple and interrelated dependence relationships between groups of values, concern for the environment, concern for economic results, and devotion of resources for environmental protection. We tested our model using the AMOS program, following the suggestions of Byrne (Byrne 2010) and Becker et al. (2016).

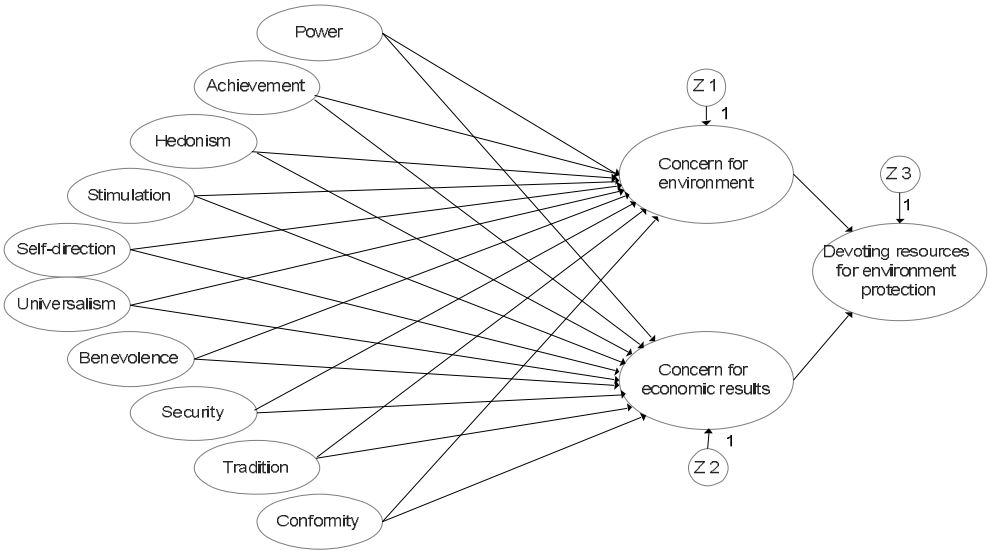

Figure 1. The model of the corporate devotion of resources for environmental protection

Source: (Nedelko, Potocan 2013)

Goodness-of-Fit Statistics – Reliability coefficients of the latent variables in the proposed model of corporate devotion of resources for environmental protection, reveal a solid reliability of the measures (Ho 2006). In frame of using structural equation modeling a fit between the data and proposed model should be achieved and reported (Byrne 2010; Becker et al. 2016).

When building a structural model, where we established relationships between personal values, attitudes and behavior, the goodness-of-fit test yielded a poor fit: χ^2 (N = 900, df = 4242) = 13849.913, $p < 0.001$; CFI = 0.427; IFI = 0.433; RMSEA = 0.050; PCLOSE > 0.05 (0.346) indicated a poor fit between hypothesized model and data (Hu, Bentler 1999; Byrne 2010; Becker et al. 2016).

Poor goodness of fit between the proposed relations and data is a consequence of plethora of variables and interdisciplinary nature of our research – i.e., the impact of personal values on issues targeting the allocation of resources for environment protection. Although these relations are well known in frame of value-attitude-behavior theory (Ajzen, Fishbein 1980; Nordlung, Garvill 2002; Rego, Pina, Polonia 2017), empirical evidences are poor.

Utilization of structural equation modeling for examination of relationship between values, attitudes and behavior are rare, and consider only significant relations between those variables (Nordlung, Garvill 2002; Oreg, Katz-Gerro 2006; Glavas, Kelley 2014). The aim of such approach is to achieve a good model fit (Byrne 2010), but consequently not including the entire array of relations between variables.

In terms of the principles for achieving a satisfactory model fit (Hu, Bentler 1999; Becker et al. 2016) and the prevalent research practice in this field

(Nordlung, Garvill 2002; Oreg, Katz-Gerro 2006; Glavas, Kelley 2014) would our model yield the following fit statistics: χ^2 (N = 900, df = 75) = 215.135, p < 0.001; CFI = 0.916; IFI = 0.917; RMSEA = 0.056; PCLOSE > 0.05 (0.128) indicated a good fit between the hypothesized model and data.

For our research we identified new constructs regarding employees' attitudes toward environment, economics results and behavior regarding devotion of resources for environmental protection. To study the personal values we adopted those from Schwartz value theory (Schwartz 1994, 2012). For newly identified variables, we researched the interplay between them and their fit to the data. The tested model is outlined in *Figure 2*.

Figure 2 presents the measurement and relation-model for the combined samples of employees and business students (N = 900).

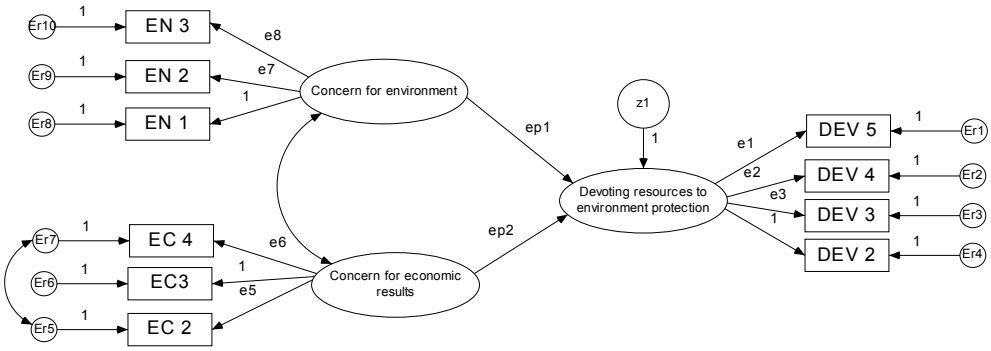

Figure 2. A final hypothesized model of relationships in the environmental model

Source: (Nedelko, Potocan 2013)

According to the proposed research design, our final model resulted in a good model fit: χ^2 (N = 900, df = 71) = 206.422, p < 0.05; CFI = 0.920; RMSEA = 0.046; $\Delta\chi^2$ = 186.04; ΔCFI = 0.070; ΔRMSEA = 0.006.

The hypotheses will be tested for employees in organizations and for then business students. We will use the final model, which will also incorporate personal values. In line with research aims, we used two samples to reveal possible differences among employees and future employees as well as the role of personal values and attitudes for shaping behavior for each sample.

We further tested whether the same factor structure is valid for both samples or not. The group invariant model – the same model is valid for both samples – results are χ^2 (N = 900, df = 71) = 206.422, p < 0.05; CFI = 0.920; RMSEA = 0.046 whereas the group variant model – involving a different model for each sample – results are χ^2 (N = 900, df = 62) = 200.934, p < 0.05; CFI = 0.918; RMSEA = 0.050. The results reveal that the group invariant model fits the data better than variant model. Thus, the same relation-structure is valid for employees and business students; the group invariant model results are considered.

In terms of identifying a possible multi-collinearity among variables in the study – i.e. employees' personal values, employees' attitudes and devotion of the resources, it is evident that the "tolerance values" ranged between 0.426 and 0.849, and the VIF values ranged between 1.177 and 2.347. In research practice, the tolerance values greater than 0.10 and the VIF values lower than 10 are acceptable (Ho 2006).

Results

Table 1. Means, standard deviations, and correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Power	4.26	1.06	1											
2. Achievement	5.13	0.84	0.663**	1										
3. Hedonism	5.02	1.37	0.375**	0.407**	1									
4. Stimulation	3.82	1.43	0.412**	0.475**	0.465**	1								
5. Self-direction	5.16	0.82	0.367**	0.554**	0.327**	0.442**	1							
6. Universalism	4.84	0.90	0.299**	0.402**	0.298**	0.249**	0.497**	1						
7. Benevolence	5.10	0.76	0.273**	0.403**	0.317**	0.271**	0.406**	0.610**	1					
8. Security	5.00	0.98	0.426**	0.477**	0.372**	0.287**	0.403**	0.555**	0.564**	1				
9. Tradition	3.18	1.23	0.366**	0.293**	0.225**	0.242**	0.210**	0.441**	0.525**	0.440**	1			
10. Conformity	4.51	1.05	0.422	0.454**	0.294**	0.251**	0.286**	0.433**	0.593**	0.535**	0.570**	1		
11. Concern for environment	2.77	1.50	0.116*	-0.051	-0.011	-0.002	-0.125**	-0.254**	-0.187**	-0.099*	-0.009	-0.063	1	
12. Concern for economic results	4.97	1.36	-0.248**	-0.148**	-0.100*	-0.113*	0.002	0.036	-0.009	-0.060	-0.123**	-0.126**	-0.287**	1
13. Devotion of resources	3.78	1.38	0.012	-0.078*	-0.039	-0.045	-0.110**	-0.210**	-0.202**	-0.132**	-0.136**	-0.128**	0.467**	-0.061

Notes: **p < 0.001, * p < 0.05; sample size is 900.

Source: Authoring

Results for employees

The impact of the employees' personal values, their attitudes toward environment and their attitudes toward concern for economic results on corporate devotion of resources for environment protection, are outlined in *Figure 3*.

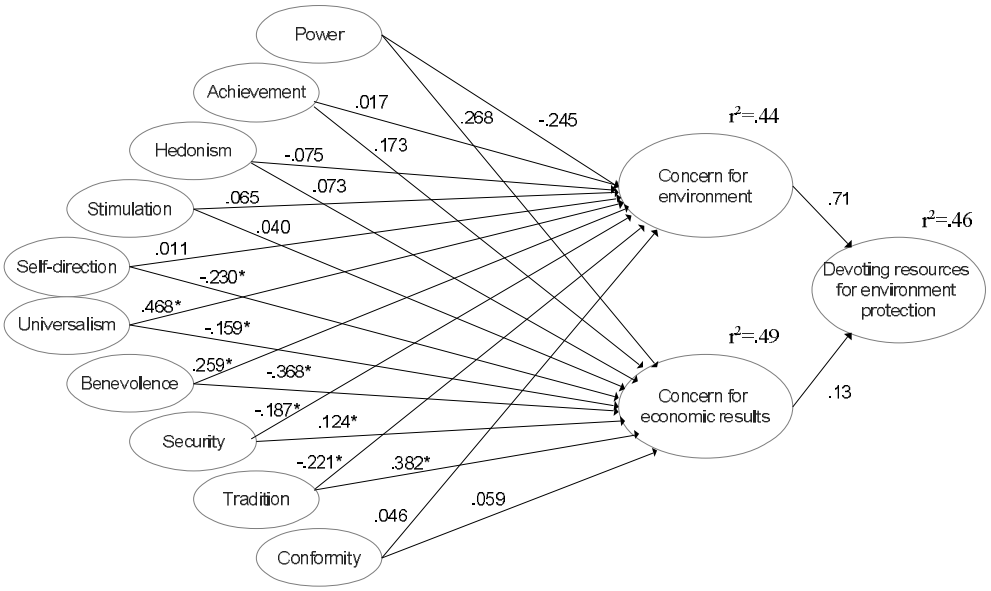

Figure 3. Standardized regression coefficients for relations between values, attitudes and behavior – employees

Source: (Nedelko, Potocan 2013)

The strongest and statistically significant effects on the concern for the environment come from universalism, benevolence, tradition, and security, thereby supporting Hypothesis 1. In other words, as the importance of universalism and benevolence increases, so does the concern for the environment. On the other hand, as the importance of tradition and security increases, concern for the environment decreases.

The strongest and statistically significant effects on the concern for economic results belong to tradition, benevolence, power, self-direction, universalism, and security; this supports Hypothesis 2. As the importance of tradition increases, so does the priority of concern for economic results. Meanwhile, as the importance of benevolence, self-direction, power, and universalism decreases, the priority for economic concern increases.

The results indicate that the concern for the environment positively and significantly impacts the level of corporate devotion of resources for environmental protection ($\beta = 0.71$, $p < 0.001$). Thus, a higher concern for the environment is associated with a higher devotion of resources to environmental protection. These findings confirm Hypothesis 3.

The results also reveal that the concern for economic results positively and significantly impacts the level of devotion of resources to environmental protection ($\beta = 0.13$, $p < 0.05$). Based on these statistical findings, we support Hypothesis 4.

The squared multiple correlations illustrate that 46% of the variance in the level of the corporate's devotion of resources to environmental protection is accounted for by the joint influence of concern for the environment and the concern for economic results. The remaining variance (i.e., 54% the level of the corporate's devotion of resources to environmental protection) cannot be explained by the model, i.e. with personal values and the considered two attitudes.

Results about the direct effect of different groups of values on employees' attitudes toward the devotion of resources to environmental protection are outlined in *Figure 4*.

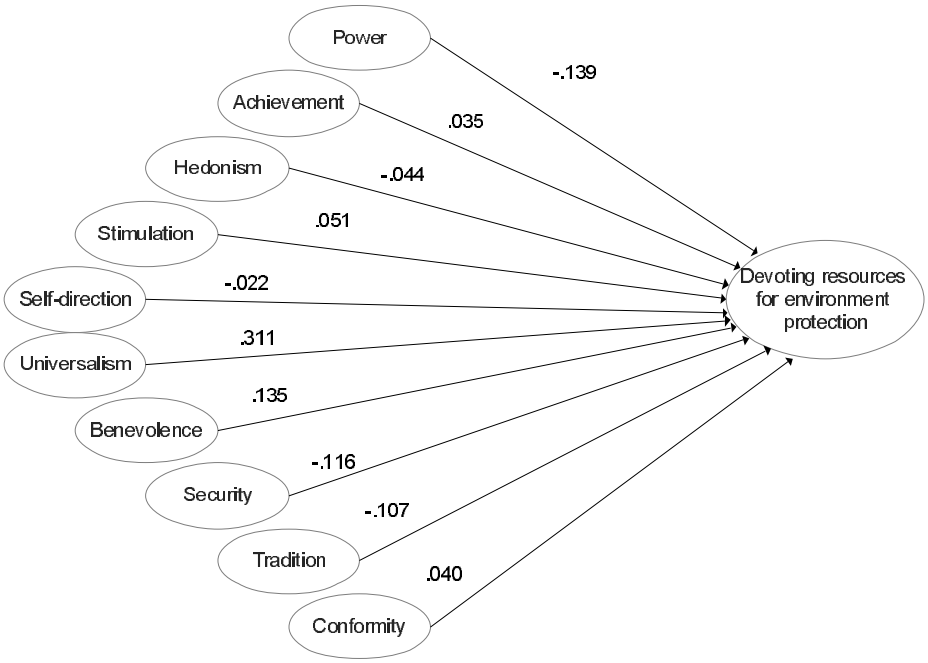

Figure 4. Standardized regression coefficients for relations between personal values and behavior – employees

Source: (Nedelko, Potocan 2013)

In the case of employees, universalism has the strongest direct effect on the devotion of resources for environmental protection. Thus, the higher importance of universalism for employees is associated with a greater allocation of resources for environmental protection. The effects of other groups of values (i.e., power, benevolence, security, and tradition) are weaker.

Results for students

The impact of the students' personal values, their attitudes toward environment and their attitudes toward concern for economic results, on corporate devotion of resources for environment protection, are outlined in *Figure 5*.

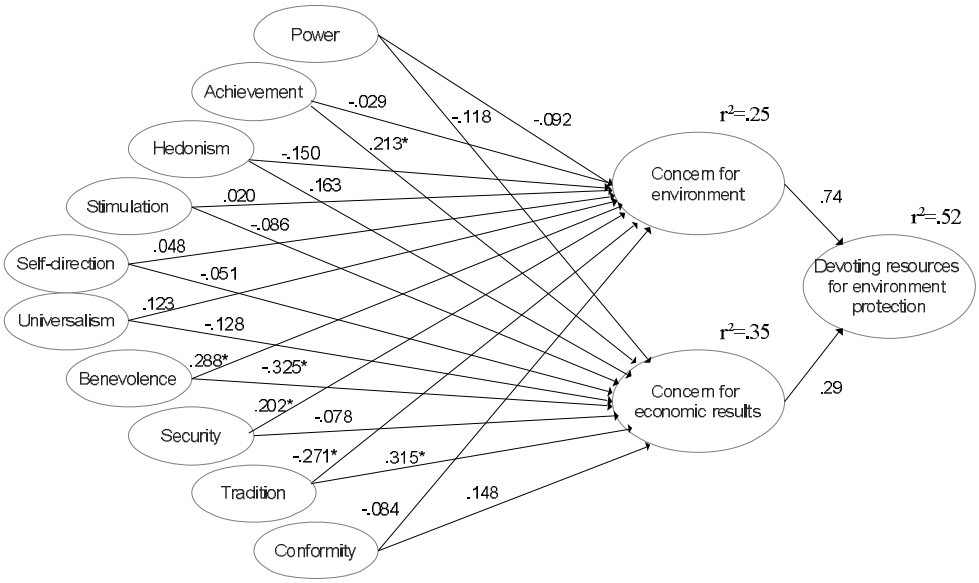

Figure 5. Standardized regression coefficients for relations between values, attitudes and behavior – students

Source: (Nedelko, Potocan 2013)

The strongest and statistically significant effects on the concern for the environment belong to benevolence, tradition, and security, which support Hypothesis 1. As the importance of benevolence and security increases, so does the concern for the environment. On the other hand, as the importance of tradition increases, the concern for the environment decreases.

The strongest and statistically significant effects on the concern for economic results come from benevolence, tradition, and achievement, which support Hypothesis 2. As the importance of benevolence increases, the priority of concern for economic results drops. Meanwhile, as the importance of tradition increases, the priority of concern for economic resultsincreases.

The results indicate that concern for the environment and concern for the economic resultssignificantly and positively impact the level of corporate's devotion of resources for environmental protection ($\beta = 0.74$, $p < 0.001$ and $\beta = 0.29$, $p < 0.05$, respectively). Thus, a higher level of concern for the environment is associated with greater allocation of resources for environmental protection. These findings confirm Hypothesis 3. The results also reveal that the concern for economic results positively and significantly impacts the level of

devotion of resources to environmental protection. Based on these statistical findings, we support Hypothesis 4.

The squared multiple correlations illustrate that 52% of the variance in the level of the corporate devotion of resources to environmental protection is accounted for by the joint influence of concern for the environment and concern for economic results. The remaining variance (i.e., 48% the level of the corporate's devotion of resources to environmental protection) cannot be explained by the model.

Results about the direct effect of different groups of values on students' attitudes toward the devotion of resources to environmental protection are outlined in *Figure 6*.

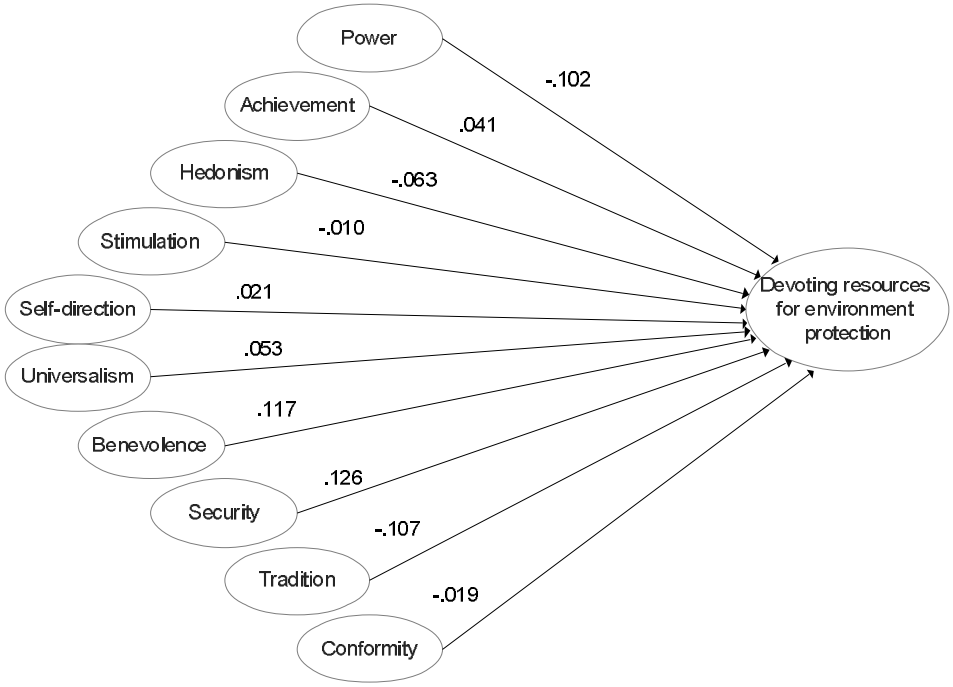

Figure 6. Standardized regression coefficients for relations between values and behavior – students

Source: (Nedelko, Potocan 2013)

The direct effects of all groups of values on the devotion of resources to environmental protection are very weak and insignificant.

Discussion

This study examined the impact of personal values on employees' and business students' attitudes regarding devoting resources to environmental protection, considering also attitudes regarding concern for environment and concern for economic results. In the last decade, the frequently emphasized issues about responsible behavior related to the natural environment have also highlighted the

need to understand how people's personal values influence their behavior when deciding about allocating resources for environmental protection (Davis, Whitman, Zald 2008; Peet, Hartwick 2009; Haq, Alistair 2011; Glavas, Kelley 2014; Rego, Pina, Polonia 2017). The examination of the student sample contributes to the more comprehensive understanding and anticipation as their behavior as the next generation of employees.

Our fundamental findings about the positive influence of universalism on the concern for the environment and on allocation of resources to environmental protection for both employees and business students are in line with the literature, which reveals universalism as a positive predictor of pro-environmental behavior (Frank, Karp, Rush 1996; Glavas, Kelley 2014) and environmental attitudes (Schultz, Zelezny 1999; Glavas 2016). However, in our study benevolence demonstrated the strongest impact on students' concern for the environment and also on their behavior regarding allocation of resources to environmental protection. This result is different from the prevailing literature, claiming that universalism is the main predictor of pro-environmental behavior (Frank, Karp, Rush 1996; Rego, Pina, Polonia 2017) and positive environmental attitudes (Schultz, Zelezny 1999; Glavas 2016); both of these ideas were also confirmed on student samples (Schultz, Zelezny 1999; Dahlsrud 2008). Our study reveals a dominant influence of benevolence for students and a dominant influence of universalism and benevolence on attitudes about environmental concern and behavior regarding devotion of resources, for employees.

Thus, our results indicate that universalism is the strongest predictor of employees' concern for the environment whereas benevolence is strongest for business students. In other considered studies, benevolence is not mentioned as a significant predictor of environmental attitudes (Stern, Dietz 1994; Schultz, Zelezny 1999; Alibeli, Johnson 2009).

The study results for both samples used in the research indicate that concern for the environment has a very strong and positive impact on people's perceptions regarding behavior about corporate devotion of resources for environment protection (which confirmed Hypothesis 3). Contrary to the expectations, the concern for economic results showed a positive, although weak impact on employees' perception regarding the level of the devotion of resources to environmental protection; for students, the impact is somewhat stronger. The combination of concern for the environment and concern for economic results accounted for 46% of the variance in the level of devotion of resources to environmental protection for employees and 52% for business students. These two predictors have a great explanatory power as they explain almost half of the variance, despite the fact that a set of rational (Axelrod, Lehmanm 1993; Blackburn 2007; Mullins 2013) and irrational factors (Schultz et al. 2005; Wang, Juslin 2011) influence people's pro-environmental behavior (Axelrod, Lehman 1993; Kemmelmeier, Krol, Hun Kim 2002; Dietz, Fitzgerald, Shwom 2005; Buchanan, Huczynski 2010).

Consistent with Hypotheses 1 and 2, the combination of the considered 10 groups of values for the employees' sample accounted for 44% of the variance in concern for the environment and 49% of the variance in concern for economic results. The values explained 25% and 35% of these variances, respectively, in the business students' sample. A similar investigation by Karp (Frank, Karp, Rush 1996) did not report the percentage of variance in environmental issues that can be explained by the personal values. In addition, Nordlung and Garvill (Nordlung, Garvill 2002) investigated the model of the influence of values through problem awareness and personal norms, finding that 21% of the variance in pro-environmental behavior was explained by a combination of values and other variables in the model.

From a statistical viewpoint, the concern for economic results significantly and positively impacts the level of devotion of resources to environmental protection for both examined samples, although this association is very weak and of little practical significance. We can argue that this tendency is in line with a "contemporary or new" view on the role of striving for economic goals in frame of the "triple-bottom line" idea emphasizing a more balanced role between the economic, environmental and social goals (Elkington 2004). Our findings about positive impact of the economic attitudes on the level of devotion of resources to environmental protection are opposite to those, claiming that the main goal of the organization is profit (Friedman 1962; Kitzmueller, Shimshack 2012).

The results of this study are influenced by several different objectives, including subjective facts and factors. Such objectives include: examining two samples simultaneously (i.e., employees and business students); using SEM when all value groups are simultaneously considered with regard to their influence on concern for the environment and for economic results; and c) using constructs for considering attitudes and behavior, based on exploratory factorial analysis, instead of the well--known variables, albeit with a very general new environmental paradigm.

Conclusions

In our study the influence of employees' values on concern for environment, concern for enterprises' results and their preparedness for using resources for environmental protection are discussed and compared with similar prior studies. Investigation mainly confirms other authors' findings about the influence of personal values on environmental issues, while some differences exist when we compare employees' and business students' samples. We present some cognitions about interdependences between personal values regarding environmental issues, and about the direct impacts of concern for the environment and for economic results in relation to devotion of resources to environmental protection**.**

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GOSPODARKA ROLNA I PRODUKCJA NA ŚWIECIE I NA WĘGRZECH

Streszczenie: Rolnictwo ekologiczne jest ważną formą zrównoważonego rolnictwa, które w przeciwieństwie do produkcji zintegrowanej nie wykorzystuje chemikaliów i sztucznych nawozów podczas produkcji na rynkach krajów rozwiniętych, gdzie środowisko i dom pozostają ważne dla konsumentów. Artykuł porusza kwestie dotyczące wiedzy konsumentów odnośnie korzyści płynących z produktów ekologicznych i ich wpływu na środowisko, aby nie traktowali ich tylko jako wyroby luksusowe. Kolejną ważną kwestią jest cena, jaką konsumenci mogą płacić za tego typu produkty na rynku, a także istniejący problem nieufności klientów względem producentów i samych produktów. W artykule uwzględniono omówienie wyników badań dotyczących powyższej kwestii, które wskazują, iż jest to bardzo ważny problem, dotyczący rynku węgierskiego, ale także i czynnik mający wpływ na rynki międzynarodowe.

Słowa kluczowe: produkty organiczne, ekologiczne gospodarstwo, rolnictwo, uprawa i produkcja żywności ekologicznej

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SUSTAINABLE BUSINESS MODELS

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Abstract: In the recent years, both academics and practitioners have looked for sustainable business models and business models for sustainability. In the literature on corporate responsibility and sustainable development, there is a gap about sustainable business models and their effectiveness in achieving competitive advantage of enterprises. The aim of the article is a synthetic presentation of various sustainable business models based on the literature

Keywords: sustainable development, business model, enterprise

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Introduction

The contemporary companies and corporations are looking for new business models that give them an advantage over competitors. Corporations and companies are more than ever requested to contribute to the achievement of sustainable development. With no doubt sustainable development is not possible without sustainable development of corporations and smaller companies. One of the options that combines economic, environmental and social issues are sustainable business models. Therefore, business managers and policy makers thinking should support the creation of valuable solutions to cope with environmental and social challenges. The aim of the article is to present the essence of a sustainable business model and the possible perspectives of sustainability.

A business model concept

Academic research and corporate practice are increasingly addressing a business model as a unit of analysis offering a systemic perspective on how to 'do business' (Zott, Amit, Massa 2011, p. 1019-1042), mainly with the aim of understanding how to improve the ability of companies to create financial value (Wirtz et al. 2016, p. 36-54) and how to create a value Teece (Teece 2010, p. 179). The value-based view of the business model explain „how a business creates and delivers value, both for the customer and the company" (Johnson 2010, p. 22) or as "the way individuals or organizations communicate, create, deliver, and capture value out of a value proposition" (Abdelkafi, Makhotin, Posselt 2013, p. 13). The

value-based view icludes value dimensions and their elements. Generally, three value dimensions of the business model are usually proposed:
(1) customer value proposition;
(2) value creation, value architecture, or business infrastructure;
(3) value capture or profit generation (Abdelkafi, Makhotin, Posselt 2013, p. 1-41).

The researchers also add two extra elements: value delivery and value communication (Abdelkafi, Täuscher 2016, p. 74-96).

According to G. Hamel a business model is, associated with customers, a composition of core strategy, strategic resources and value network (Hamel 2000, p. 683-713). According to Osterwalder et al. „A business model is a conceptual instrument to help explainn how a firm does business and it is usable for analysis, comparison and performance assessment, management, communication, and innovation" (Osterwalder et al. 2011, p. 22-30).

The business model is a comprehensive concept that formulates a framework for logic of conducting business and its features such as innovation and competitiveness (Nogalski 2009). The business model is a conceptual tool that includes a set of components and their relationships, presenting a schematic business idea for a specific company. It therefore constitutes a static model of the phenomena, in contrast to the strategy of company's expressing the actions and behaviour in relation to changing environmental conditions and its interior (Brzóska 2009, p. 13; Brzóska, Jelonek 2015; Seroka-Stolka, Krawczyk--Sokołowska, Grabowska 2016, p. 122).

Generally, four main elements of business models are indicated in the literature. These are as follows: value proposition, value network, value capture, value creation and value delivery (Bocken et al. 2014, p. 42-56; Boons, Lüdeke-Freund 2013, p. 9-19) (*Figure 1*).

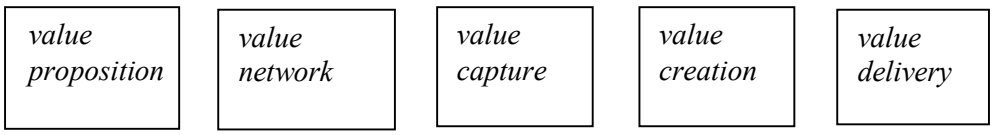

Figure 1. Elements of business model framework

Source: (Bocken et al. 2014, p. 42-56; Boons, Lüdeke-Freund 2013, p. 9-19)

In summary, "a business model helps understand of how a company does business and how it creates values and formulates the business logic and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the company delivering that value" (Teece 2010). In the literature, there is no agreement about the common definition of the business model.

At the same time, there is a lot of literature about business models and approaches to corporate sustainability. Companies are face to new challenges for sustainable development that requires rethinking of their business logic.

The sustainable business models concept

The researchers claim that sustainable[1] business models should not only integrate social, economic and ecological aspect but there is also a necessity of a complex approach to cope with the challenges of a sustainable future (Bocken et al. 2014, p. 42-56; Skowron-Grabowska et al. 2016).

Dyllick and Hockerts present the model based on the concept of corporate sustainability (balancing and integrating the areas of enterprises' activity) presented in the form of a triangle. This model recognizes three key elements in the model: business case, natural case and societal case. The authors take into account not only the environmental effectiveness of the company's operations but also the social and economic efficiency in this model (Dyllick, Hockerts 2002, p. 130-141).

McDonough and Braungart introduce a model of corporate sustainability in the form of a fractal triangle in which the corners are: ecology – ecology, equity – equity and economy - economy. Between the corners of the triangle are intermediate states, taking into account the marginal conditions described in the corners. The different approaches are characterized in that (McDonoug, Braungart 1998):

- economy – economy approach focuses on factors arising out of generated profits,
- equity – equity approach focuses on improving the quality of life of all stakeholders and restoring the condition of ecosystems,
- ecology – ecology approach means the respect for the laws of nature and creative behaviour in a given location (eg. local aspects).

This model strongly emphasizes the importance of the economic factor (profits), but also widely recognizes environmental aspect and its importance in maintaining the balance in the human being's ecosystem.

Some proposals of sustainable models that take into account the environmental efficiency factor. The first so-called pro-efficiency model of social and environmental responsibility (business) is built with the emphasis on the validity of the assumptions of sustainable development and the CSR objectives achievement. This model assumes the integration of the effectiveness of environmental, social and economic operations, so focus on efficiency. The second model so called enterprising model of social and environmental responsibility (business), is an explication of the first model with emphasis on the role of innovative attitude (Chodyński 2011, p. 155). Both models include eco-efficiency factor but they differ only in their entrepreneurial mindset. Moreover this entrepreneurial mindset emphasises the role of human capital (Bahrami, Nosratabadi, Illés 2016, p. 111-115). However, in business practice, it will be difficult to distinguish these two business models.

S. Schaltegger et al. (Schaltegger, Lüdeke-Freund, Hansen 2012) argue that a business model for sustainability can create economic success through a certain

[1] Sustainability is best known for its ecology-related interpretation, which also means, in a broader sense, the flexibility and sustainability of the organization's life or even its reincarnation.

environmental or social action and business models for sustainability support voluntary activities which solve or moderate social and/or environmental problems (Schaltegger, Lüdeke-Freund, Hansen 2012, p. 112). This proposition is close to proactive models and strategies. According to these researchers proactive strategies represent an holistic view of environmental or social objectives as a part business logic in order to contribute to sustainable development of the economy and society. S. Schaltegger et al. (Schaltegger, Lüdeke-Freund, Hansen 2012) link voluntary social and environmental activities and corporate economic effects together (Schaltegger, Lüdeke-Freund, Hansen 2012, p. 112). They explain that a business model for sustainability helps describing, analyzing, managing, and communicating (a) a company's sustainable value proposition to all stakeholders, (b) creation and delivering this value, (c) capturing economic value (Schaltegger, Lüdeke-Freund, Hansen 2012, p. 112).

Schaltegger et al. (Schaltegger, Lüdeke-Freund, Hansen 2012) point out that a business model for sustainability is characterised by three common requirements. First of all, the company should act voluntary. These voluntary actions can contribute to the solution of environmental and societal problems and give a positive business effects or a positive economic performance. Such positive corporate effects can provide to "the increase of sales and competitive advantage, cost savings, preferable profitability, customer behaviour or reputation" (Schaltegger, Lüdeke-Freund, Hansen 2012, p. 112). Mentioned authors emphasise that the cause and effect relationship between voluntary activity and economic profits can be direct or indirect. However, these effects must be reasonable measured but not speculative. It means that a certain management activity lead or will lead to societal or environmental effects, and the economic effects. Furthermore, there are identified key drivers that economically justify a sustainability-oriented business model like: cost reduction, increase sales and revenues, risk and risk reduction (Schaltegger, Synnestvedt 2002), reputation, attractiveness as employer, and innovative capabilities (Schaltegger, Lüdeke--Freund, Hansen 2012, p. 98). In sum, a business model for sustainability creates positive business effects but it requires active management then it will create customer and social value by integrating social, environmental, and business activities (Schaltegger, Lüdeke-Freund, Hansen 2012, p. 98). The creation of sustainable value is mostly achieved through product, process, and technological innovations. (e.g., Hansen, Große-Dunker, Reichwald 2009, p. 683-713; Schaltegger, Lüdeke-Freund, Hansen 2012, p. 95-119). Sustainable value as an element of business model is usually achieved by product, process, and technological innovations. Nevertheless, innovation are not sufficient to transform industries, societies and organizations. (e.g., Hansen, Große-Dunker, Reichwald 2009, p. 683-713; Schaltegger, Lüdeke-Freund, Hansen 2012, p. 95-119). Nevertheless, innovation business models may help reduce the use of natural resources in the short term. They may also cause a bound effect that increases the consumption of products and services by making them more cheap and accessible and be a key to create a strategic impact effect (Hansen, Große-Dunker, Reichwald 2009, p. 683-713).

F. Boons, F. Lüdeke-Freund widen a sustainability business innovation model and propose: organizational, technological, and social innovation element of business models (Boons, Lüdeke-Freund 2013, p. 9-19). It is important to recognize that these elements of the model do not stand separately. Technological innovations might depend on organizational change or support social value propositions. Unfortunately, new technologies are not sufficient to change production and consumption systems. However, business model acts as a mediator between consumption and production technologies. The changing the business model paradigm towards sustainability is possible but as say Boons et all "business model change on the organizational level is about the implementation of alternative paradigms […] that shape the culture, structure and routines of organizations and thus change the way of doing business towards sustainable development" (Boons, Lüdeke-Freund 2013, p. 15). A sustainable business model is the aggregate of different corporate approaches to business. Social innovations and eco-innovations are perceived as a key to creating and transforming markets towards sustainable development.

N. Bocken et al. introduce types of a sustainable business model from an efficiency perspective. The archetypes are:

- "energy and material efficiency,
- creating value from 'waste',
- substitute with renewables and natural processes,
- deliver functionality rather than ownership,
- adopt a stewardship role,
- encourage sufficiency,
- re-purpose the business for society/environment,
- develop scale-up solutions" (Bocken et al. 2014, p. 42-56).

Recent literature presents business models for sustainability from a system dynamics perspective. According to N. Abdelkafi and K. Täuscher (Abdelkafi, Täuscher 2016) a business model for sustainability should create value for different stakeholders and the natural environment. but natural environment in this proposition is an essential element. This concept of a business model is based on the specific causal loop between the value captured by the company, and the value to the natural environment and the created value to the customers (Abdelkafi, Täuscher 2016, p. 74-96; Abdelkafi, Makhotin, Posselt 2013, p. 1-41).

Several scientific contribution confirm the dynamic and complex nature of business models (Demil, Lecocq 2010, p. 227-246; Cyfert, Krzakiewicz 2014, p. 16) and the natural environment (Seroka-Stolka, Krawczyk-Sokołowska, Grabowska 2016, p. 122) and the complexity by the integration of sustainable development into the business model (Porter, Derry 2012, p. 33-53).

Contemporary companies act in dynamic environments and conditions and must become more and more sustainable, however so far little is known about a business model from perspective of the marketplace and its dynamics. According Schaltegger et al. (Schaltegger, Lüdeke-Freund, Hansen 2016) the dynamics of business model is propelled by three mechanisms: variation, selection and

retention. These evolutionary mechanisms support the dynamics between business model innovation and sustainability transformation of markets (Schaltegger, Lüdeke-Freund, Hansen 2016, p. 264-289; Abdelkafi, Makhotin, Posselt 2013, p. 1-41; Demil, Lecocq 2010, p. 227-246).

Another proposition of the sustainable business model is presented by N. Roome and C. Louche (Roome, Louche 2016). They present business models for sustainability through the interactions between individuals and groups inside and outside companies. This new business model consists of three elements: "building networks and collaborative practices for learning and action around a new vision, the deployment of new concepts drawn from outside the company, and elaborating an implementation structure within a reconfigured network" (Roome, Louche 2016, p. 11-35). Moreover, Roome, Louche (2016) propose extra element of the sustainable business model: value destruction (Roome, Louche 2016, p. 11-35). Some researchers propose examine the corporate sustainability from a multilevel perspective (Starik, Kanashiro 2013, p. 7-30) and the try to integrate multiple theories from other disciplines to achieve a broader view of sustainability (Sharma, Starik, Husted 2007, p. 18-19).

Concluding, the review of the literature highlights two key aspects of sustainable business models. Firstly, the sustainable business model that not only links production and consumption but also link stakeholders and their expectations from non-business areas and consequently firm's profit generation.

Sustainable business models are presented from different perspectives and levels to integrate of different disciplines to achieve a wide view of sustainability. Secondly, the process of value creation is central to any sustainable business model and provides a direct connection to the firm's value proposition. Revised literature (Bocken et al. 2014, p. 42-56; Boons, Lüdeke-Freund 2013, p. 9-19; Roome, Louche 2016, p. 11-35) indicates that all elements of the business model as value proposition, value network, value capture, value creation and value delivery are important for sustainable business models. If we add a new element of the business model for sustainability – value destruction, an "old" framework of sustainable business can be enriched (*Figure 2*).

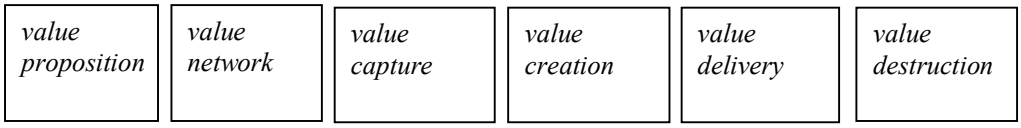

Figure 2. Elements of sustainable business model framework

Source: Own elaboration based on (Bocken et al. 2014, p. 42-56; Boons, Lüdeke-Freund 2013, p. 9-19; Roome, Louche 2016, p. 11-35)

Successful sustainable business models

Nowadays, there has been a big debate on whether sustainability efforts have a positive or negative impact on the company's financial performance. We can ask the fundamental question: what is a successful (sustainable) business model? The

successes of conventional company may be measured by economic performance operating profits and corporate value.

The successful sustainable business model seems to be more sophisticated because in general sustainability measure are not usually incorporated into accounting practices, decision making, or general the business models. Sustainability can be measured by indicators that estimate the performance and effects of business model decisions in a simply and clear way (Upward, Jones 2016, p. 97-123). First of all, competitive advantage and economic performance should be given for companies via successful business models. However, it should be taken into account the fact that low environmental performance corresponds to a high-economic performance which is called as an inverted U-shaped curve (Wagner, Van Phu, Amazohou, Wehrmeyer 2002). Notwithstanding there is no consensus about this relationship among economists. Moreover, Schaltegger and Synnestvedt (Schaltegger, Synnestvedt 2002) argue that voluntary ecological actions can increase the firm's financial performance but only until a peculiar optimum point after which profitability starts declining with every additional ecological activity (Schaltegger, Synnestvedt 2002, p. 339-346). So, it is an open question how to improve voluntary practices within existing business models (Lüdeke-Freund 2010; p. 339-346).

Success of sustainable business models depends on the approaches to sustainability. There can be indicated two types of sustainability "weak" and "strong" sustainability related to sustainable business models. First of all, it should be clarified differences between "weak" and "strong" sustainability. "Weak" sustainability means including environmental goals into the structures and systems of business. "Strong" sustainability integrates all the activity of the company into environmental or socio-ecological systems. This "strong" approach to sustainability is based on the whole system thinking of the firm and is incorporated in its business logic. It is characterized by a more radical change. In contrast, the "weak" sustainability is more based on incremental changes and use only some sustainability elements (Roome 2012, p. 620-621; Upward, Jones 2016, p. 97-123). A "strong" sustainable business model must supply the organization a base for leading the co-creation of value with all an organization's stakeholders: customers, shareholders, social, and others actors in the organization to create value. A "strong" sustainable business model is proposed from four elements: stakeholders, learning and development of the product and processes, and measurement each of the elements. To sum up, environmental, social, and financial economic aspects are an important elements of the sustainable business model (Upward, Jones 2016, p. 97-123).

To conclude, the literature indicates that a successful sustainable business model has "strong" perspectives on economic success, in comparison to "weak" perspective. These two perspectives of sustainable business model are positions on the same continuum. "Strong" sustainability demands an understanding of the broader macro-economy (Upward, Jones 2016, p. 97-123).

Furthermore, there is a need for favourable conditions for companies in the marketplace for sustainable business models. Moreover, successful sustainable

business models should be adapted to external environments. The important factors affecting successful business models are fulfilment of external stakeholder's expectations, changes in the competitive environment, regulatory forces influencing external stakeholders and changes in the competitive environment. What more, regulatory forces are more relevant than technological or market-related forces and opportunities brought about by new technologies. Nevertheless, successful sustainable business models may appear under conditions of threats as well as opportunities (Upward, Jones 2016, p. 97-123). However, it must be pointed out that a successful sustainable business model is insufficient to guarantee competitive advantage for firms because of their transparency for other companies which can imitate them. There is an agreement to some degree that even a successful business model cannot guarantee competitive advantage in the long period.

Conclusions

Companies and in particular corporations are forced to contribute to the achievement of sustainable development more than ever. To achieve sustainability, companies has to transform its entire business logic. So far, the literature distinguishes two archetypes of sustainable business models from narrow (weak sustainability) to broad perspectives (strong sustainability) and indicates "strong" sustainable business model as the most successful. There is a need for the diffusion of new sustainable business models in the market to achieve the "strong" sustainable business models. Three mechanism of the evolutionary processes (variation, selection, and retention) can support the diffusion of sustainable business models in mass market but it is still open question how to generate economic performance.

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ZRÓWNOWAŻONE MODELE BIZNESU

Streszczenie: W ostatnim czasie badacze i praktycy biznesu poszukują modeli biznesu dla zrównoważonego rozwoju, które są coraz bardziej złożone i kompleksowe. W literaturze dotyczącej odpowiedzialności korporacyjnej i zrównoważonego rozwoju istnieje wciąż luka poznawcza na temat zrównoważonych modeli biznesu oraz ich skuteczności w osiąganiu przewagi konkurencyjnej przedsiębiorstw. Celem artykułu jest syntetyczna prezentacja różnych zrównoważonych modeli biznesu na podstawie literatury przedmiotu.

Słowa kluczowe: zrównoważony rozwój, model biznesu, przedsiębiorstwo

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CRUCIAL CONDITIONS FOR MAKING INVESTMENTS IN THE CZĘSTOCHOWA REGION

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Abstract: The article focuses on the major aspects of economy development of the Częstochowa region in terms of its activity in Special Economic Zones being regarded as the chance to grow the number of investors in the city and the whole county. The authors present and analyze the factors influencing the level of entrepreneurship in Częstochowa, the issues of employment and crucial aspects of solving the problems of joblessness among the citizens. The aim of the article is to discuss the challenges and chances the region of Częstochowa can face by taking the advantage of its geographical strategic location.

Keywords: investing, promoting, city development, management, entrepreneurship, business activity

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Introduction

For the majority of municipals, the most important issue is to develop the opportunities to attract the investors who will contribute in the economy growth of the city or the whole region, and, consequently, more workplaces will become available, production will increase and improve, and the region itself may convert into more alluring place to live and work. Regions nowadays, should follow the concept of dynamical, constant and creative path focused on growth and development in order to function in a very competitive business environment (Illés, Dunay, Jelonek 2015, p. 48; Schermerhorn 2008, p. 147). This is not just the aspect of individual business management strategy, but the strategy of the city and region which, if opened to investors, innovations and new economy tasks, creates the background for entrepreneurs to advance and expand their businesses. Częstochowa should, therefore, benefit in particular from the geographical location and the opportunities afforded by access to special economic zones in order to increase the level of entrepreneurship and investments. The potential of the environment may influence the economic growth and development of creativeness and productivity of managers and employees in the company (Matejun 2017, p. 25; Lemańska-Majdzik, Okręglicka 2015, p. 394-403). It gives the opportunity and ability to develop effective marketing activities that can translate into the company's success, which, eventually, will be also a success of the city and the region.

Special Economic Zones in the Częstochowa region

The Częstochowa region is located in a strategic location since it crosses the 6th trans-European transport corridor and accordingly creates a node connecting important communication routes of importance in the implementation of transport activities on a national and international scale. A part of the implemented strategy for the development of the region is also the separation and preparation of industrial areas designated for the activities of new and existing investors. An important step towards increasing the efficiency of flows is the construction of the city beltway in order to connect investment areas and internal road networks with motorway interchanges. All investment areas in the region include totally 300 ha (Mielczarek, Herbuś, Iżyński 2016, p. 62; Pachura, Zajac, Matlovic 2017, p. 111), and their task is to meet the needs of new and potential investors. Within them, Special Economic Zones (SEZ) are separated.

According to the Polish Act of Law (Published on Oct 20th, 1994 r. about special economic zones (Journal of Lows No. 123 item 600) changed on Feb 14, 2007 r. (Journal of Lows No. 42 item 274)), SEZ is "an uninhabited part of the territory of the Republic of Poland, separated in accordance with the provisions of the Act, on whose territory economic activity may be carried out under the terms of the Act". The purpose of the functioning of the zones is the phenomenon of synergy resulting from the cooperation of investors operating in individual regions, as a result of which both investors and regions can count on accelerated development. The designation of zones is connected with real public aid for the enterprises operating in it connected with granting the following tax benefits, i.e. (Ruksza, Kapsa 2015, p. 86):

- small enterprises – 45%,
- medium-sized enterprises – 35%,
- large enterprises – 25%.

Other benefits of the presence in the Zone are primarily the development of undertaken investments and activities on appropriately prepared, well-developed grounds. SEZ invests both in small and medium-sized companies with foreign capital as well as local family businesses. In order to be able to operate in areas covered by the SEZ, the enterprise must meet the requirements set out in the Act on the SEZ of Katowice and applicable ordinances. The production, logistic, production and service enterprises as well as those that show activity focused on innovation which are particularly desirable in the zone. According to Knop & Brzóska (Knop, Brzóska 2017, p. 87), the level of innovativeness in Poland is rather low and it may cause certain barriers in the development of the country. Therefore, it should be regarded as the challenge for the Polish economy to increase its competitiveness on the global market. The strategies of implementing innovations can help the regions to develop its market positions and competitive potentiality. This might be the main task for SEZs in Poland as the number of them is quite remarkable.

There are currently 14 SEZs operating in Poland: Kamienna Góra SSEM, Katowice SEZ, Kostrzyn-Słubice SEZ, Kraków Technology Park, Legnica SSE,

Łódź SEZ, Euro-Park Mielec, Pomeranian SEZ, Słupsk Special Economic Zone, SEZ "Starachowice", Suwalska Special Economic Zone, Euro-Park Wisłosan, Wałbrzych Special Economic Zone "Invest-Park" and Warmia and Mazury SEZ (Sikora 2016).

In the area of Częstochowa, there are two of them: the Katowice Special Economic Zone (KSEZ) and the Special Economic Zone Euro-Park Mielec (SEZ Euro-Park Mielec), which occupies an investment area of a total of 70 ha.

In overall, 19 837 ha of land with the zone status were allocated to Poland. *Figure 1* shows the size of areas occupied by particular zones in Poland.

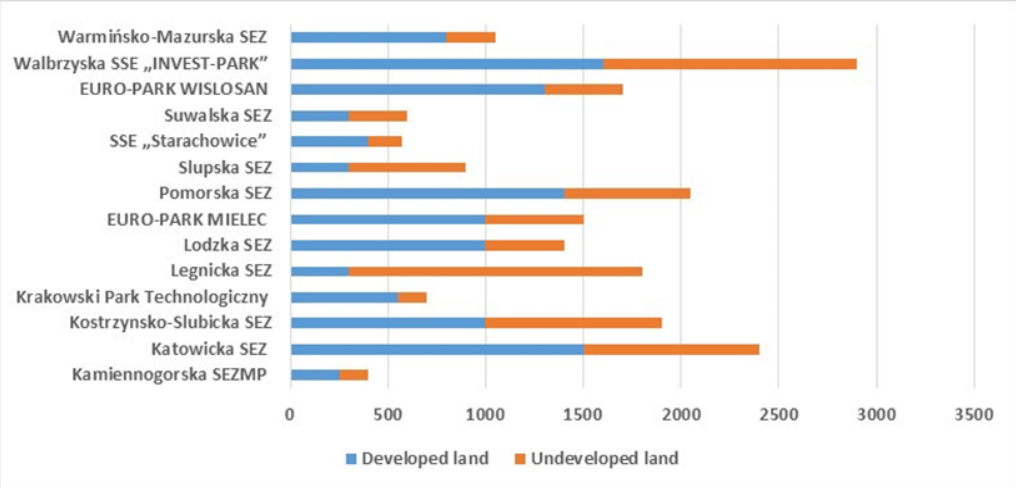

Figure 1. Areas occupied by particular economic zones in Poland [ha]

Source: Own study based on (*Investment Potential* ..., 2016, p. 4)

It is observed that the largest area is occupied by the Wałbrzych SEZ "Invest-Park", the zone of almost 3000 ha. Second place belongs to Katowice SEZ, covering almost 2.5 thousand. ha mainly in the Częstochowa region. The second Euro-Park Mielec operating in the examined SEZ region is located in the middle of the ranking and occupies a total of 1.5 thousand. ha. investment areas. At the same time, local zones still have a large part of undeveloped land, in total for both cases it is still 1.5 thousand. ha. developed areas ready to welcome new investors.

In recent years, the number of entrepreneurs and investors in special economic zones has increased in the Częstochowa region. Many EU investments have been implemented. By 2010, four large domestic enterprises had grown up in the two Zones of the region, and six more decided to start operations there. The resolution of Częstochowa City Council of 19 March 2015 regarding the exemption from taxation of real estate located in special economic zones in the field of regional investment aid to support new investments for innovative entrepreneurs also contributed to the growth of the undertaken investments. Applicable tax breaks have contributed to the creation of new jobs. In 2014, an agreement was also

signed between representatives of both Zones and the Częstochowa Municipality regarding the mutual promotion of the city's investment areas (Matyjaszczyk 2017, p. 5). Selected numerical data on the investments undertaken in particular Zones before and after 2014 are presented below.

Table 1. Effects of the functioning of companies in SEZ in the Częstochowa region

Company name	Permission to 2014		Permission after 2014	
	Investment expenditure (incurred) [PLN million]	Number of new vacancies	Investment expenditure (assumed) [PLN million]	Number of new vacancies
TRW Sp. z o.o.	343	656	3,8	245
GST Automotive Safety Poland Sp. z o.o.	89	268	8	12
Retail Service	0	0	2,5	150
X-Kom Sp. z o.o.	0	0	38	40
Hufgard Optolith Bauproduktce Polska Sp. z o.o.	0	0	4	10
ViperPrint Sp. z o.o.	0	0	7,5	15
CGR Polska Sp. z o.o.	0	0	30	22,4
WIKO Sp. z o.o.	0	0	10	11
Enckel Sp. z o.o.	0	0	10	50
LiM Kowolik Sp. jawna	0	0	3,5	14
Total	432	924	109,7	577

Source: Own study based on (Ruksza, Kapsa, 2015 p. 90)

By 2015, in the province there were a total of 10 companies operating in the region, including two Park Mielec belonging to the SEZ Euro (gray fields in the above table) and eight to the KSEZ. Until 2014, only two enterprises showed significant capital expenditures and demand for almost a thousand new employees. After this time, as a result of obtaining a permit, capital expenditures have already borne all the companies, which can be seen in the *Table 1*, thus providing employment to nearly 600 new people. At present, there are thirteen large companies operating in the area of the region.

At the same time, analyzing over a dozen leading investors of all national zones, which incur the greatest investment expenditures on the development of their operations, four of them belong to the Katowice SEZ (*Table 2*). At the same time, no leading investor was identified, which operates in the second zone of the Częstochowa region.

Table 2. Key investors on the national scale operating in the Katowice Special Economic Zone

Entrepreneur	Zone	Sector	Source of capital
General Motors Manufacturing Poland	Katowicka	Automotive (cars)	USA
NGK Ceramics Polska	Katowicka	Automotive (diesel engine filters)	Japan
FCA Powertrain Poland	Katowicka	Automotive (engines)	Italy
Electrolux Poland	Walbrzyska i Katowicka	Household appliances	Sweden

Source: Own study based on (*Investment Potential* ..., 2016, p. 5)

The leaders of Katowice SEZ mostly carry out activities in the automotive industry and have foreign capital of various origins. The creation of this zone initiated the creation of the automotive cluster "Silesia Automotive". In total, over 260 investors operate in the entire zone (data from the Silesian, Opole and Małopolska voivodeships), which value of the undertaken investments has now exceeded PLN 25 billion.

The Mielec SEZ consists of 28 subzones located mainly in the south-eastern part of Poland, including the Częstochowa region. The zone stands out among the national SEZs with the number of investments undertaken in the aviation industry. The total number of investors in the zone is 185, and their investment outlays currently exceed PLN 8.5 billion.

The Częstochowa region occupies a high place in the classification of investment potential of Polish voivodships. In 2015, he was promoted to the 8th position thanks to the significant activity of entities operating in SEZ (Tarkowski 2015, p. 21). The region's high attractiveness for industrial operations also stems from having other investment areas outside the Zones. The location of zones within the city influences the development of innovation, which is observed in the growth of the region's position in terms of conducting activities in the area of high technologies.

Supporting entrepreneurship in the Częstochowa region

The created economic zones constitute development potential especially for the SME sector, which is the main driving force of the region. At the end of 2016, according to the REGON system, there were over 26 thousand companies registered in Częstochowa, of which 90% were private sector companies operating mainly in services and trade. The largest number of registered entities were small enterprises employing 0-9 people (95%), entities employing 10-49 people (4%) and employing more than 249 people (1%) (Ruksza, Kapsa 2015, p. 91). The support covers both newly created entities and entities operating on the market. The number of newly established and operating business entities in Częstochowa is shown in *Figure 2*.

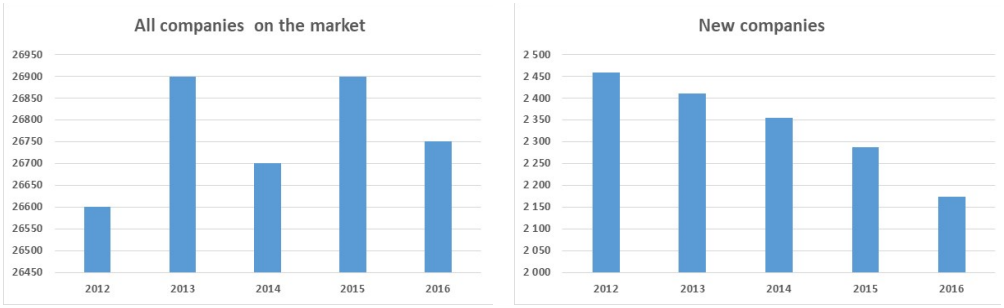

Figure 2. Changes in the number of operating and newly created business entities in Częstochowa in 2012-2016

Source: www.stat.gov.pl

When analyzing the number of newly created in recent years the number of enterprises in Częstochowa, their regular decline is observed, which may result from the saturation of the market and limited investment opportunities in designated economic zones. At the same time, the number of enterprises operating on the market for a long time also undergoes considerable irregular fluctuations, which is the result of both entries and extracts from the REGON system.

In this situation, various initiatives and projects that stimulate economic activity in the studied region play an important role. In addition to the aforementioned tax reliefs for companies in SEZ, the city authorities also take other active ways to support entrepreneurship, among which one can distinguish, among others, reducing property taxes for employers creating new jobs and building office rooms in an environmentally friendly standard. An important initiative is also the exemption from property tax as part of regional investment aid for the implementation of innovative solutions (Bylok, Łazorko, Cichobłaziński 2011, p. 88).

In addition, according to Regional Development Agency in Częstochowa SA (ARR Czestochowa SA) five major projects supporting companies in the Częstochowa region were undertaken over the last five years:

1. "Development Services Center in the Silesian Voivodship. Support for SMEs and their employees", under which the services for acquiring new knowledge, skills or competences of entrepreneurs and their employees may be financed;
2. "Entrepreneur's Academy" is a project addressed to all entrepreneurs and employees of enterprises, aimed at supporting companies in the field of legal advice;
3. "Breakfast with Entrepreneurs" concerns improvement of communication between entrepreneurs and city authorities by organizing cyclical meetings between them, intended to exchange experience and knowledge in the area of local business development;

4. Loan fund for SMEs – low-interest loans intended for small and medium-sized enterprises, among others, for the purchase of equipment, real estate or raw materials and materials;
5. "Business Academy" is a series of trainings addressed to all entrepreneurs and their managerial staff, whose aim is to increase access to modern knowledge in the field of management and legal issues that entrepreneurs face on a daily basis.

Actions taken by the city authorities will contribute to improving the conditions for running a business, and thus to the city's economic development. The key areas of support include creating places friendly to the development of entrepreneurs, creating favorable financial conditions, cooperation with city authorities, universities and parliamentarians (Nowakowska-Grunt, Wiśniewska-Sałek 2014, p. 783). The main goal of the undertaken activities is to reduce the unemployment level by organizing new and attractive jobs.

The problem of unemployment and employment opportunities in the Częstochowa region

The development of entrepreneurship in the Częstochowa region and the increase in investment definitely translates into the economic situation of the inhabitants. The Częstochowa region has been experiencing a dynamic decline in unemployment in relation to the national average over the last years. This is confirmed by data indicating unambiguously that the number of unemployed persons decreased from 12 232 (indicator 11.2%) at the end of 2014 to 9087 (indicator 8.5%) at the end of 2015, and in the following year – 2016 – occurred further decrease to 6766 (indicator of 6.3%). The first two months of 2017 brought a slight increase to 7.003 people, but this is a cyclical phenomenon related to the winter period. The indicator from 2014 – 11.2% meant 98.2% of the national average; the end of 2015 indicator 8.5% is 86.7% of the national average. At the end of 2016, the average unemployment rate in Poland was 8.6%, in Silesian Voivodeship it was 6.8%, and in Częstochowa 6.3%. This means that for the first time in 15 years, the unemployment rate in Częstochowa is less than the region's average. Despite promising trends, the problem of unemployment is still current and requires more work to initiate opportunities and mobilize residents to take up employment. At the end of 2016, 11 594 unemployed were registered in the data county at the County Labor Office, of which 6766 are specifically residents of Częstochowa, including 3593 women. The low unemployment rate clearly reveals social causes. Among women there is high unemployment in the age groups from 25 to 44 (in total 2004 unemployed, for a total of 3593 women without work). There were only 862 unemployed men in the same age group. A clear advantage of unemployed men can be seen in age groups over 45 years. There is also a large number of long-term unemployed which is 3603 individuals. People with basic vocational and lower education dominate in this group, but also a new phenomenon is revealed: long-term unemployed with higher education. Against this background, the growing problem of the lack of hands to work should be noticed. Not only IT

specialists are sought for, but also qualified construction workers, trade workers or catering services. Despite the measures taken, several more years are needed to achieve greater professional activity of the groups. Opportunities for employment can be seen primarily in the sector of small and medium enterprises. Employees, according to data of the Polish Central Statistical Office (GUS) for 2015, in enterprises employing more than 9 people, were 73.802 at the end of 2015. This means that despite the demographic reduction in the number of inhabitants, for the first time in several years there has been an increase in employment in compared to the previous year 2014, in which there were 70 805 employees in enterprises included in the Central Statistical Office statistics. The largest employment is generated by industry and construction: 27 291, trade: 16 803, services: 25 152, financial and insurance services: 2375. According to the County Labor Office (Jan 16, 2017), the decrease of unemployment in Częstochowa roots in very good situation on the labor market due to several activation activities, implemented both by the Office with the support of social welfare centers, as well as non-governmental organizations, local governments and employers who created new jobs. The large drop in the number of unemployed results also from the cooperation with the local authorities whose aim is coordinate the constant improvement of the investment market which should create new workplaces.

Conclusions

The Częstochowa region is constantly changing, and more and more are being put on the development of the city in terms of expansion investments and improvements that serve the entrepreneurship. For the city and residents it is a chance to improve not only lifestyle but also economic conditions. The main goal of the local government is to stop young people from moving out and make them stay in the city, so that they start their work, their business activities implementing their ideas knowledge and competences. This cannot be done without the business cooperation in the whole region with other cities and without taking the advantage of the geographical location of Częstochowa. Special economic zones give an opportunity for Częstochowa to develop economically and socially as the entire region. The city attractive for investors will create new jobs which will build and strengthen the economic potential for current and future generations to be used for business purposes. The city's development generally translates into the level of entrepreneurship, the attractiveness and competitiveness of the local market and, eventually, the development of all residents. The analysis of the above issues in the article leads to the statement that the programs supporting the city development translate into concrete results such as reduction of unemployment, new employment taking, elimination of social exclusion, production increase and a wider range of business activities. That is why, it is so important to use the potential of the business environment to improve the economic condition of the region.

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KLUCZOWE UWARUNKOWANIA PODEJMOWANIA INWESTYCJI W REGIONIE CZĘSTOCHOWSKIM

Streszczenie: Artykuł koncentruje się na głównych aspektach rozwoju gospodarczego regionu częstochowskiego pod kątem jego działalności w specjalnych strefach ekonomicznych, traktowanych jako szansa na zwiększenie liczby inwestorów w mieście i całym powiecie. Przedstawiono i poddano analizie czynniki wpływające na poziom przedsiębiorczości w Częstochowie, kwestie zatrudnienia i kluczowe aspekty rozwiązywania problemów bezrobocia wśród obywateli. Celem artykułu jest omówienie wyzwań i szans, jakie może napotkać region częstochowski poprzez wykorzystanie strategicznego położenia geograficznego.

Słowa kluczowe: inwestowanie, promocja, rozwój miasta, zarządzanie, przedsiębiorczość, działalność gospodarcza

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FICTION AS A BRAND – A DISCUSSION ON APPLICATION OF POPULAR BRAND MANAGEMENT THEORIES IN THE CREATIVE INDUSTRY

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Abstract: Many reports indicate that the creative industries are an important part of the global economy. While some examples of popular brands of movies, books or computer games, they are not widely discussed, and their specifics differ greatly from other goods and services. This article attempts to study the application of the concept of brand extensions, presenting different ways of brand building on selected examples from the creative industry. Author also highlights other issues related to brands in this industry that require further analysis.

Keywords: brand, brand extension, creative industry, film industry, video games, transmedia storytelling

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Introduction

Keller (Keller 2011) indicates that basically everything can be a brand, including people, organizations, ideas. In the field of entertainment, he gives examples of movie characters including Austin Powers, Batman and Harry Potter (additionally he presents the case of *Star Wars* franchise as a brand). The main implied reason for treating those fictional characters as brands is their general recognition, which causes the audience to follow movie sequels, referred in the book as "brand extensions". In the Polish edition of his book, the editors try to give examples of Polish movie series in the form of *Vabank*[1] and *Sami swoi*[2]. While those movies clearly follow the idea of using known characters in sequels, something seems wrong with this comparison. Keller's examples (maybe except Austin Powers[3]), are both cultural and commercial phenomenons. Aforementioned Polish movies, all filmed in the socialist Polish People's Republic, had drastically lower production and marketing budgets, so there is no point in comparing their success with Keller's examples. There is, however, one major difference. Keller

[1] A 1981 comedy film by Juliusz Machulski, followed by a sequel in 1984.
[2] Released internationally as *Our Folks* and *All Friends Here*, a 1967 comedy film by Sylwester Chęciński, followed by two sequels (1974 and 1977).
[3] The least known character (which has been the protagonist of only three movies and a video game) pointed by Keller, which will be excluded from further discussion.

"brands" were "extended" to many different product types (two of them can be considered "extensions" themselves, actually). When it comes to *Vabank* and *Sami swoi*, calling their sequels "brand extensions", or even referring to those movies as "brands" is debatable. It would be impossible to ultimately confirm or reject the idea of treating everything as a brand, at least given this article length restraints; there surely is room to discuss if it is possible to directly apply brand management theories to the creative industries.

The following discussion is based on a literature overview, some insights from netnographic analysis of brand communities[4] and Author's own experiences with particular brands.

The Creative Economy

The terms *cultural industries* and *creative industries*, which have different history in the context of theory and policy, are sometimes used interchangeably as they both refer to the question "how cultural goods are produced and disseminated in modern economies and societies" (Hesmondhalgh 2008). One of the early examples of official documents concerning this domain is UNESCO's *Cultural industries. A challenge for the future of culture*, exploring the problem of globalization and industry-scale manufacturing, which could damage the cultural development. It stated that "creative industries held to exist when cultural goods and services are produced, reproduced, stored or distributed on industrial and commercial lines, that is to say on a large scale and in accordance with a strategy based on economic considerations rather than any concern for cultural development" (Girard 1982, p. 21). While the document focused more on the sociological and technological shifts in how culture is created and consumed, the importance of culture in a nation's economy soon was discovered. The Australian *Creative Nation* initiative from 1994, which stated that culture generated 13 billion AUD[5] a year (Creative Nation 1994). UK's Department for Culture, Media and Sport (DCMS[6]) created the *Creative Industries Mapping Document* in 1998, in which it was calculated that creative industries accounted for 4% of UK's GDP and earned 7.5 billion GBP[7] from exports, also creating nearly 1 million jobs. The document defined creative industries as "those activities which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property" (BOP Consulting 2010, p. 16). The document also defined a set of 13 creative industries (see *Table 1*). Howkins (Howkins 2001, p. 8) defined these industries as providing "an economic good or service that results from creativity and has economic value",

[4] The research included official and unofficial communities gathered around 23 video game brands, and was conducted in 2016 as a part of Author's PhD thesis.
[5] Approx. 22.7 billion AUD in the end of 2016 considering the inflation (about 68.7 billion PLN and 16.4 billion USD, based on National Bank of Poland exchange rates).
[6] For a time renamed to Department for Culture, Olympics, Media and Sport (DCOMS).
[7] Approx. 12.1 billion GBP in the end of 2016 considering the inflation (about 62.3 billion PLN and 14.9 billion USD, based on National Bank of Poland exchange rates).

expanding the DCMS list with *toys and games* and *R&D* categories. He also uses the term *Creative economy*, which refers to any transactions related to creative industries. The United Nations Conference on Trade and Development document TD(XI)/BP/13 (UNCTAD 2004) acknowledged creative industries as "upstream" activities, closely related to traditional art forms (literature, performing arts, etc.), and "downstream" activities, as more market-related (advertising, design, publishing, etc.), therefore seeing cultural industries a subset of creative industries, which themselves, together with *distribution-based industries* form the *copyright industries*.

As can be seen from above examples, the definition and approach to creative industries can differ in different institutions, or even countries. Some institutions (eg. DCMS) tend to change their understanding of creative industries over time, updating their agreed list. *Table 1* contains a comparison of defined sets of creative industries from different sources. The myriad of definitions and research methodologies used in different reports make it hard to determine the exact size and revenues of creative industries. Nevertheless, it can be agreed, that creative industries play an important role in global economy.

Table 1. Comparison of categorizations of creative industries by different sources through the years

DCMS 1998	Howkins 2001	UNCTAD 2004	DCMS 2016
• Advertising • Antiques • Architecture • Crafts • Design • Fashion • Film • Leisure software • Music • Performing arts • Publishing • Software • TV and radio	• Advertising • Architecture • Art • Crafts • Design • Fashion • Film • Music • Performing arts • Publishing • R&D • Software • Toys and games • TV and radio • Video games	• Recording industry • Music and theatre production • Motion picture industry • Music publishing • Book, journal and newspaper publishing • Computer software industry • Photography • Commercial art • Radio, television and cable broadcasting	• Advertising and marketing • Architecture • Crafts • Design: product, graphic and fashion design • film, TV, video, radio and photography • IT, software and computer services • Publishing • Museums, galleries and libraries • Music, performing and visual arts

Source: (Howkins 2001, p. 88-117; UNCTAD 2004; BOP Consulting 2010; DCMS 2016)

Brands in the creative industries

Probably the most commonly cited definition of a brand comes from American Marketing Association (AMA), which describes it as a "name, term, sign, symbol or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of other sellers"

(see eg. Kotler 2005, p. 410). It should be noted that this definition is usually cited only as an introduction to further discussion, and numerous researchers provide their own proposition. Brand is frequently perceived as a deeper construct, which reaches beyond the identification function. For example, Altkorn (Altkorn 1996, as cited in: Klama 1998, p. 239) sees it as "a composition of functional and emotional values in a subjective and/or objective manner". De Chernatony and McDonald (1992, as cited in: de Chernatony 2002, p. 24) define the brand as "identifiable product, service, person or place, augmented in such a way that the buyer or user perceives relevant unique added values which match their needs most closely", which is quite close to Keller's (Keller 2011) discussion suggesting that nearly anything can be a brand, since, as he implies, "a brand is something in consumers' minds" (Keller 2011, p. 28). The idea of a brand as a mental construct, a set of associations, is one of the most influential in brand literature, and was heavily explored earlier by Keller (Keller 1993) and Aaker (Aaker 1991).

Successful management of a brand may have a significant meaning to the brand owner, resulting in (among others):

- legal protection,
- better awareness,
- consumer loyalty,
- reduced marketing costs,
- resistance to competitive threats,
- bigger company value,
- possibility of brand extensions,
- possibility to sale the brand (see for example: Aaker 1991, 2002).

On the other hand, brands provide important functions for consumers (Kapferer 2008, p. 22[8]):

- Identification – quickly finding the sought-after products, structuring shelf perception.
- Practicality – saving time and energy through identical repurchasing.
- Guarantee – confidence of the same quality of branded products.
- Optimisation – confidence of buying the best product in its category, the best performer for a particular purpose.
- Badge – confirmation of self-image or the image presented to others.
- Continuity – satisfaction created by a long term relationship of familiarity and intimacy with the brand over the years.
- Hedonistic – enchantment linked to the attractiveness of the brand, to its logo, to its communication and its experiential rewards.
- Ethical – satisfaction linked to the responsible behavior of the brand in its relationship with society (ecology, employment, citizenship, etc.).

The importance of brands in the creative industries may not seem obvious, yet it can be clearly seen when analyzing the top performing titles from the film and

[8] While Kapferer's list is one of the most complete, other researchers suggested similar functions of brands (see eg. Urbanek 2002, p. 24-25; Urbańska 2008, p. 77-78; Witek-Hajduk 2011, p. 33-38).

video game industries (see *Table 2*). The popularity of video game sequels was as evident over a decade ago (Taub 2004) as it is now (Sherr 2017), and only one title from the top 10 best selling games in 2017[9] (*Horizon: Zero Dawn*) was based on a new, original intellectual property (IP). In the list of top 10 highest grossing movies, there were none.

Table 2. Top grossing movies and top selling video games in 2017 (January--November)

Rank	Movie title	Notes	Game title	Notes
1	*Beauty and the Beast*	Live-action remake of 1991 animated movie (based on 18th century fairy tale)	*FIFA 18*	25th installment of the *FIFA* game series, licenced by FIFA organization
2	*The Fate of the Furious*	8th installment in the *Fast and the Furious* series	*The Legend of Zelda: Breath of the Wild*	18th major installment in the *Legend of Zelda* series
3	*Despicable Me 3*		*Horizon: Zero Dawn*	
4	*Spider-Man: Homecoming*	Part of Marvel Cinematic Universe	*Mario Kart 8 Deluxe*	Part of a massive *Mario* franchise
5	*Wolf Warrior 2*		*Pokemon Sun/Moon*	7th generation of video games in the *Pokemon* franchise
6	*Guardians of the Galaxy vol. 2*	Part of Marvel Cinematic Universe	*Crash Bandicoot N. Sane Trilogy*	Remastered versions of first three titles in the *Crash Bandicoot* series
7	*Wonder Woman*	Part of DC Expanded Universe	*Tom Clancy's Ghost Recon Wildlands*	10th installment of *Tom Clancy's Ghost Recon* series, one of five main series licensed with Tom Clancy's name
8	*Pirates of the Caribbean: Dead Men Tell No Tales*	5th installment in the *Pirates of the Caribbean* series	*Splatoon 2*	
9	*Thor: Ragnarok*	Part of the Marvel Cinematic Universe, 3rd *Thor* title	*Resident Evil VII: Biohazard*	11th main installment and 24th overall installment in the *Resident Evil* game series
10	*It*	Based on the 1986 novel by Stephen King; first of two planned movies	*Grand Theft Auto V*	

Source: Own elaboration based on the data from (http://www.boxofficemojo.com/…; http://www.vgchartz.com/…)

[9] As for November 2017.

Nearly all titles listed in *Table 2* can be treated as a brands, since they carry a significant amount of recognition, awareness, and mental associations among the consumers, that was built over the years. The only exception is *Horizon…*, which is a rather new IP, however its commercial success already built enough awareness to transform it into a prosperous brand in the future.

An important factor of the listed titles, is the way they create the brand. Keller (Keller 2011), while referring to movies, was not giving examples of titles, but their fictional characters as "brands". Sequels of *Sami swoi* do not share the same title (which could disqualify them as a brand using AMA definition), but share the same identifiable characters. The brand in fiction can be developed by the creative industries in many different ways that are hard to be explicitly treated as brand extensions.

Brand extensions in fiction – a discussion

Tauber (Tauber 1988, p. 27) defined brand extensions as "using a brand in one category to introduce products in a totally different category. In some instances licensing is used, but in most cases a manufacturer is searching for ways to cost effectively enter new categories", although in his previous work (1981) he referred to this practice as a "franchise extension", also distinguishing a "line extension" – using an existing brand in the same product category. Farquhar (Farquhar 1989) sees these both practices as different types of brand extensions: a category extension and a line extension. He also mentions licensing (a way to gain revenue by providing a third party the right to use a brand) as a separate strategy rather than a form of extension. A similar approach can be seen in Clifton and Simmons (Clifton, Simmons 2003) book. Colucci, Montaguti and Lago (Colucci, Montaguti, Lago 2008) treat licensing as a way of extending the brand (which they call "stretching"). Discussions on successful use of different types of extensions can be easily found (Aaker 1990; Aaker, Keller 1990; Boush, Loken 1991; Bridges, Keller, Sood 2000), although they are rarely concerned about the creative industry.

The basic problem in applying the term "brand extensions" to creative goods, especially fiction, is the different way of their consumption. Regular consumer products can be produced and sold for decades without any major changes, while the lifecycle of a creative good is relatively shorter. Except for cases of changes to the medium containing the good (i.e. VHS to DVD and later to Blu-Ray or digital distribution) or its slight update (i.e. remastered or enhanced version), there is basically no reason to purchase the same product again. Therefore, as a way of keeping the brand "alive", we can find:

- sequels – continuing the story – eg. *Vabank 2*, *Die Hard 4*;
- prequels – presenting the events that led to the original story – eg. *Star Wars Episode I* (released in 1999, 16 years after *Episode VI*);
- and spin-offs – telling a different story that is somehow related to the main plot – eg. *Rogue One: A Star Wars Story* (2016, set between episode III and IV), *The Short Second Life of Bree Tanner* (2010, story of a supporting character from the *Twilight* book series).

In addition to the above "extensions" there are also "shared universes", eg. the "Marvel Cinematic Universe", where different characters or their groups (Iron Man, Thor, Captain America, The Avengers) have their own series, yet they cross--over to from one series to another, creating a shared story.

If we still agree to call those products brand extensions, they would be "line extensions", since they are based in the same category. A typical "category extension" would be adaptations, which try to retell the story in a form of different medium[10], for example:

- from novel to a film – eg. *War of the Worlds* (novel 1898; film 1953, 2005);
- a video game to a film – eg. *Tomb Raider* (video game series since 1996; film 2001, 2003);
- a film to a video game – eg. *E.T. The Extraterrestrial* (film 1982; video game 1982), etc.

Licensing, which can be a very profitable way of using brands from creative industries, can be easily identified in the case of non-fiction products, like toys, posters and all kinds of gadgets and consumer products bearing a brand name, logo, or one of the brands characters[11]; it is doubtful that creators of a series of (for example) animated movies are also skilled in creating all those things, therefore they must be produced by some other entity. On the other hand, the brand "extensions" sometimes also concern products carrying a story, which can be both in the same or a different medium as the original, and both produced by the brand owner or licensed to another company.

The categorization of different creative works as brand extensions gets really complicated in the case of "transmedia storytelling", a term introduced by Jenkins (Jenkins 2003), who discussed the case of *The Matrix* film trilogy. Before the release of the third movie (*The Matrix Revolutions*, 2003), the story was expanded in the form of animated short stories (released as a collection titled *Animatrix*), comic books and video games. In this case (and many different, since *The Matrix* is not the only example of transmedia storytelling), the branded products differ in their form, and belong to different product categories (sometimes created by other entities), though they create one bigger story, a "brand" consisting of various smaller parts, and as such, the point of referring to the "parts" as "brand extensions" makes little sense. The idea of transmedia storytelling brands is well explained by Scolari (Scolari 2009, p. 600), who imposes that "[in transmedia storytelling] the brand is expressed by the characters, topics, and aesthetic style of the fictional world. This set of distinctive attributes can be translated into different languages and media: It is a "moveable" set of properties that can be applied to different forms of expression. In fan fiction, even consumers can participate in the

[10] It is important to note, that the use of different media, given its nature and limitation (duration, dynamic, form of expression), may force changes in the story and/or other aspects of the IP, the degree of change may vary greatly. The changes may also be a result of different interpretation of original work, as the creators of the adaptation and the source material are often different people, which may or may not cooperate with each other.

[11] The extents of licensing can sometimes go beyond reason, as the Author once found a pack of potatoes with an image from Disney's *Frozen* animated movie.

expansion of the fictional world by applying this set of attributes to create new situations and characters". These days it is usually a matter of time before a successful brand in the creative industry is moved to another media, so this definition can easily be applied even in the case of a single-medium brands.

The influence of fan fiction and other fan creations on brands is surely important and highly discussed (eg. Muniz, O'Guinn 2001; Shau, Muniz, Arnauld 2009; Christodoulides, Jevons, Bonhomme 2012), therefore intentionally omitted in this article as too extensive. It brings up, however, the topic of *canon* in creative works. The term *canon* in the creative industries is usually referring to the whole of creations contributing to the "official" storyline, which is important to keep track of if the number of brand products is growing, and produced by different creators (especially licensees). For example, the *Tomb Raider* movies are loosely based on the story presented in video games, and therefore *non-canon*, while most officially released[12] creations of *The Matrix* brand are canon. The *Star Wars* franchise was a great example of canon policy, as the canonicity of every licensed book, comic book, video game and other form of fiction was supervised and approved by Lucasfilm company as a part of "Expanded Universe" (EU), which story spans 4000 years before and over 130 years after the events of the six *Episodes*. After the acquisition by the Disney company, all creations except the movies and the *Clone Wars* animated series was rebranded as "Legends", and considered non-canon (Taylor 2014). This controversial decision made "room" for filming a new sequel trilogy and additional material, which story would otherwise collide with the previously canon events covered in other media. This can be considered as a partial *reboot* of the brand, and a creation of an alternative *continuity*, which are both popular decisions in managing brands in the creative industry. The *Tomb Raider* video game series was rebooted twice, creating three different continuities of the story. The characters from Marvel Comics participate not only in a shared universe, but in dozens of different continuities, treated as alternative universes, which even can cross-over with each other. One of the universes is the "Marvel Cinematic Universe", consisting of the movies – although some series produced by Fox and Sony are separate continuities. Similarly, movies based on DC Comics characters in the "DC Extended Universe" (started with *Man of Steel*, 2013) build a different continuity than the "Arrowverse", consisting of TV series (started with *Arrow* in 2012), there are also numerous comic book and animated series continuities.

Summary and further research

Such complex myriad of different approaches to brands in creative industries rise several issues with the application of brand theory, not only in terms of accuracy of brand extension definitions. Jenkins (Jenkins 2003, p. 96) implied that "A good transmedia franchise works to attract multiple constituencies by pitching the content somewhat differently in the different media. If there is, however, enough to sustain those different constituencies – and if each work offers fresh

[12] Not to count any fan can creations (as they are part of the so-called *fanon*).

experiences – then you can count on a crossover market that will expand the potential gross". Just a few paragraphs away, however, he highlights the problems *The Matrix* franchise had with a mixed audience reactions, since not every consumer invested the same amount of energy in the consumption of the brand, and how it's different implementations were "trashed" by critics, when treated individually (see e.g. Brzóska, Jelonek 2015). Just a brief look at the aforementioned Kapferer's brand functions rise several questions:

- Does the *practicality* function apply to creative industries, since every product is different, and rarely repurchased?
- Are different media equally appealing to all the audience? Are they equally easy to consume? (regarding *optimisation* function);
- Is it easy to identify the right continuity/canon of the stories? Where should one start experiencing the brand? (regarding *identification* function);
- Is the intellectual property owner in control over every product? Are they of similar quality? (regarding *guarantee* function);
- Does rebooting a series (or changing the canon) affect the long-term relationship with the brand? (regarding *continuity* function) (Brzeziński 2016).

The reports of different institutions clearly point out the importance of cultural industries in the global economy. It is also evident that brands play a major role in the consumption of fiction. There are, however, a lot of ways those brands are created, extended and consumed, and those ways differ greatly from typical consumer products. This creates a gap in brand-related literature, both as the lack of theoretical approach to brands in cultural industries, and research over different strategies of building and extending those brands.

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FIKCJA JAKO MARKA – DYSKUSJA NAD ZASTOSOWANIEM POPULARNYCH TEORII ZARZĄDZANIA MARKĄ W PRZEMYŚLE KREATYWNYM

Streszczenie: Wiele raportów wskazuje, iż przemysł kreatywny stanowi istotny element globalnej gospodarki. Choć w literaturze niekiedy przywołuje się przykłady marek popularnych filmów, książek lub gier komputerowych, nie są one szeroko omawiane, a ich specyfika znacznie różni się od innych dóbr i usług. W niniejszym artykule podjęto próbę odniesienia się do koncepcji rozpowszechniania marki, przedstawiając rozwiązania w zakresie budowania marek na wybranych przykładach z przemysłu kreatywnego. Naświetlono także inne problemy związane z zarządzaniem marką w tym przemyśle, które wymagają dokładniejszej analizy.

Słowa kluczowe: marka, rozszerzanie marki, przemysł kreatywny, przemysł filmowy, gry komputerowe, opowieść transmedialna

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ORGANIZATION AND PROBLEMS OF FUNCTIONING PUBLIC TRANSPORTATION ON THE EXAMPLE OF THE CITY OF CZĘSTOCHOWA

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Abstract: Public transport has a significant role in the carriage of passengers in urban areas. The operation of the passenger transport subsystem in cities at times requires to solve numerous problems. Public transport organizer is responsible for solving transport problems. Types of transport problems depend primarily on the city's functions. For this reason, the article presents the problems of public transport in Częstochowa. It specifies actions that should be taken immediately to encourage users of the urban public transport in Częstochowa to increase the frequency of journeys. These suggestions should constitute an important guideline for the planned actions with regard to the organization of public transport in Częstochowa.

Keywords: sustainable development, public transport, organizer of public transport, public transport operator, carrier, problems of public transport

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Introduction

Stagnation is not a good term for describing the current situation in the world. On the contrary can be observed the presence of constant changes taking place in the different areas of activity. These changes involve political and economic situation, as well as the implementation of new technologies, etc. Making changes largely favours globalization and the progressive development of civilization. This contributed to create new challenges in field of strategic management in organization (including local government units) (Kościelniak, Skowron-Grabowska, Nowodziński 2017, p. 19). Currently, organizations wanting to survive in the market have to think about the long-term prospects of business, setting the directions of activity and types of strategic and operational activities (Stańczyk-Hugiet 2016, p. 6; Brzóska 2017, p. 69). Moreover, in order to provide citizens with a high quality of life, the city authorities should focus on developing a marketing strategy for the city, taking into account social and economic trends (Stefko, Bacik, Fedorko 2017, p. 244). The implementation of marketing strategy allows to increase the attractiveness of urban areas. Increasing attractiveness of urban areas is possible by introducing new solutions among others in freight transport as well as in passenger transport (Skowron-Grabowska 2014, p. 35).

Occurring changes affect the change in passenger transport. The population is more and more mobile. This mobility includes both journeys carried out daily or on an occasional basis. The problems associated with an increase in the mobility of society are most visible in areas of large population concentration, f.ex. in the cities. This promotes the emergence of difficulties in the management of transport in these areas. These difficulties can be overcome by defining, designing and implementing the smart solutions. The European Union clearly emphasises the need to act related to the provision of safe, efficient and high-quality passenger transport services. In the Commission's white paper of 12 September 2001, entitled "European transport policy for the year 2010: time to decide" clarifies that the collective public transport services should be provided, to ensure their transparency and efficiency. A necessary condition in this case is to draw attention to the social and environmental factors and the factors of regional development (Regulation (EC) No 1370/2007 (Rozporządzenie (WE) nr 1370/2007…)), to ensure the availability of services for all groups of passengers. As M. Chłąd states to make this possible, you must allow citizens to use the cheap public transport services without derogating from the quality of the services provided (Chłąd 2011, p. 149). Government, regional and local authorities are responsible for the implementation of these actions. The actions assigned to them should be performed with expediently, effectively and efficiently (Nor Zaini, Kuppusamy 2017, p. 153). The introduction of measures in this regard, the undoubted will to ensure the sustainable development of transport.

Organisation of public transport services

The collective public transport is called widely available regular transport of people executed at specific intervals and after a specific communication line, communication lines or communication network (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 4. paragraphs 1 and 2. 1. paragraph 14). All entities involved in the process of collective public transport management, operate based on the relevant legal regulations (Szczepańska, Budzik, Petryczka 2014, p. 12052). Issues relating to the principles of organizing and functioning of the regular carriage of passengers in public transport collective agreement is carried out in the territory of the Republic of Poland and in cross-border zone saved were in the Act of 16 December 2010 r. the collective public transport. As of March 1, 2011, this Act entered into force. Regulations contained in the Act apply to both transport by road, rail, different rail, linear, linear-off-road, marine as well as inland waterway transport (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 1. paragraphs 1 and 2. 1.). The Act also lays down rules on the financing of the regular carriage of passengers in public transport. As J. Cage organizer is obliged to finance only transportation of public service. Disabled is the possibility of financing by the commercial services (Klatka 2015, p. 27).

The organizer of the public transport is the correct one unit of local government or the competent minister of transport, to ensure the functioning of the public transport in the area (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art.

4. paragraphs 1 and 2. 1. paragraph 9). It follows that, for the organisation of passenger transport in the county is the municipality, in the district-a district and in the administrative-state. The municipal passenger transport can take place in the administrative borders of one municipality or contiguous municipalities, among which was the relevant agreement on the organisation of public transport or that have established a relationship villages (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 4. paragraphs 1 and 2. 1. paragraph 3). Passenger services under the public transport carried out in the administrative borders of at least two municipalities and not excessive beyond the boundaries of the district are called regional/county passenger services. It is also possible in this case to operate within the boundaries of the administrative counties. Necessary in this case, however, is the conclusion of an appropriate agreement or create a connection counties (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 4. paragraphs 1 and 2. 1. point 10). In turn, the regional passenger transport by road is called a carriage effected in within the administrative borders of at least two counties. Condition for defining a type of transport regional passenger traffic is not going beyond the borders of one province.

Public transport can be executed by a public transport operator (operator) or carrier (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 6. paragraphs 1 and 2. 1.) with proper qualifications necessary to perform public transport (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 4. paragraphs 1 and 2. 2.) Public transport operator is known as the local government financial undertaking and the trader shall be entitled to operate a business in respect of the carriage of passengers, which has concluded with the organizer of the public transport the agreement for the provision of services in the field of public transport (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 4. paragraphs 1 and 2. 1. paragraph 8). While the carrier is called the trader shall be entitled to operate a business in respect of the carriage of persons based on confirmation of the Declaration and in rail transport-on the basis of a decision to grant an open Access (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 4. paragraphs 1 and 2. 1. paragraph 11).

Tasks of the Transport Organizer (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 7. paragraphs 1 and 2. 4. paragraph 1-6):

- mayor, mayor or president of the city;
- commune association – the board of commune association;
- the city district – mayor of the city of counties;
- district – mayor;
- districts association – the board of districts association;
- province – marshall of province.

The main tasks of Organizer include transport development planning, organizing and managing public transport public transport (*Figure 1*).

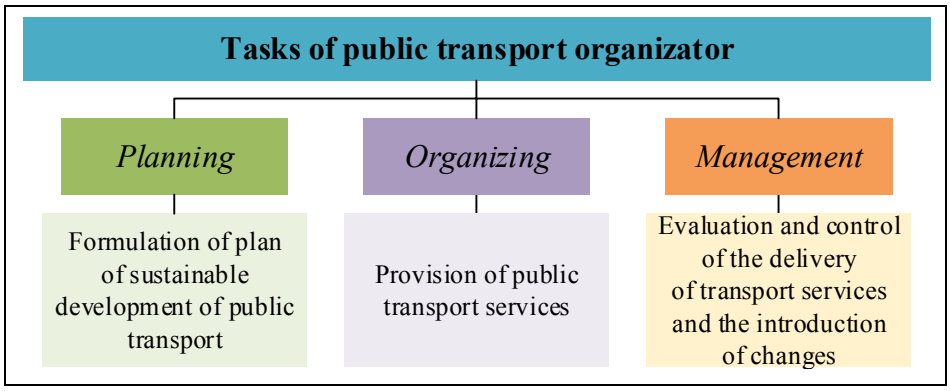

Figure 1. The fundamental task of the organizer of services for public transport

Source: Own elaboration

According to J. Nowakowska-Grunt and M. Chłąd problems with operation-German contemporary transport systems require the development of modern strategy is the need to develop transport (Nowakowska-Grunt, Chłąd 2015, p. 137). This strategy should be based on the organizer's transport plan. Transport plan should define a communication network, which will provide transportation services. The organizer's task is also to develop the principles of organization of the market on the communication network. The transport plan should also include a comprehensive plan for the type and manner of transport services. Necessary in this case is to plan what means of transport will be implemented the services of a public utility. In the transport plan should be also define channels for the transfer information about provided services from service providers (the operator and/or carrier) to recipients (passengers). To develop a plan to meet transport needs, however transport users. This allows you to specify the preferred standard of service. Success of public transport in the transport is to offer such a standard of service that will be more useful than the use of means of transport (Zając 2014, p. 137). The last issue, which should not be forgotten, is to plan how the activities related to the provision of services in passenger transport, will be funded. In this case, it is necessary to specify the transport plan of all sources of funding, regardless of whether I have the nature of return or non-refundable.

In turn, the organisation of public passenger transport in requires action relating to the maintenance of the infrastructure necessary for the implementation of operations. Necessary in this case is to ensure that appropriate standards of the functioning of the communication stops and train stations, interchanges, and the same means of transport used in the transport. The task of the organizer is also operator selection and/or provider of transport services, and then conclude with them contracts for the provision of services in the field of public transport, including the determination of terms and conditions of communication stops and train stations. The last task having a huge impact on the modelling of transport volume in the collective public transport, is the fixing of charges for carriage and other charges and methods of ticket distribution to recipients of public transport

services (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, 15). Pricing of tickets has a significant impact on the shaping of the frequency of use of the public transport services. This task should be carried out considering several factors. The most important of these include the socio-economic and environmental factors.

The final stage related to the operation of public transport is to manage it. In this case the organizer should focus primarily on the evaluation and control of the current functioning of the system of passenger transport services. Control has the task of m.in. check whether the operators and air carriers shall comply with the rules in the field of public transport. It is also in this case, to examine whether and to what extent the met have been shipping needs of recipients (Dz.U. 2011 nr 5 poz. 13 / Journal of Lows No. 5 item 13, art. 43.). To ensure that improving the functioning of the transport action necessary in the process of collective public transport management is correcting the course of existing communication lines. It is also very important making updates timetables, to adapt it to the volume of traffic on a managed by units of local government area.

The use of public transport by the users of public transport in Częstochowa

To define the directions of changes in the organisation of public transport, necessary to introduce in Częstochowa, a quantitative survey has been carried out in the 2017. The research method was a questionnaire, a tool – a questionnaire survey, which was made to online respondents. Access to an interactive poll was made possible by a direct link that was posted on one of the social networking sites. The study was completely anonymous.

Selection of any sampling was random. The study involved 51 respondents. Research Group comprises of 33 women and 18 men. Questionnaire survey was primarily to young people who use public transportation to meet your transport needs, using public transport to implement trips for educational purposes and (*Figure 2*).

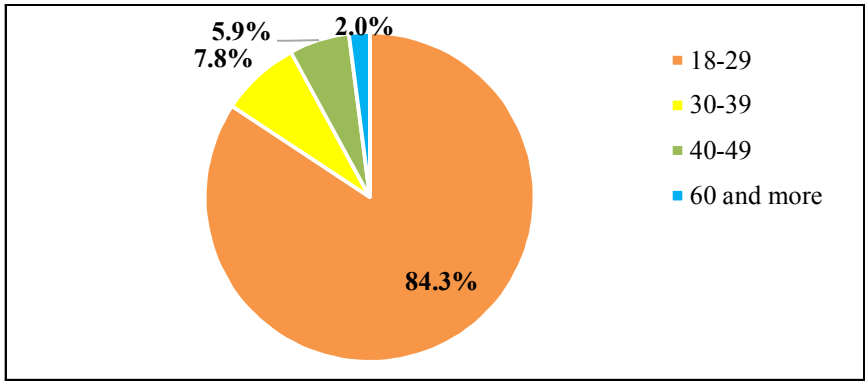

Figure 2. The age structure of the respondents

Source: Own elaboration based on the conducted studies

As in the above, the largest group of respondents were between the ages of 18 to 29 years, 84.3% of the respondents. Among these, the largest group were women (63%). In the research group are also persons whose age is in the age group 30-39, 40-49 and 60 years and more. They were successively 7.8%, 5.9% and 2% of the total respondents. In the survey, 35 respondents indicated that they have the Statute of the pupil or student. There were also 26 indications for "active response" and one for the answer "unemployed". It should be noted that 24 of the respondents admitted that the only learning or studying, another 11 people, that in addition to the fact that they learn and study are also active professionally. 15 respondents pointed out one answer-active professionally.

The questionnaire also included a question whether the study participants are in possession of a driving licence category b. This question was very important in the light of the analysis. The fact that permission to carry a passenger car may contribute to the reduction of interest used by respondents during transport. The results of research allow to conclude that a significant group surveyed people in possession of these rights (92% of the total).

The criterion for the selection of subjects was that they had to use the services provided by the operator of the collective public transport in Częstochowa. As a result, most study participants admitted that travelling by public transit (37.25% of the total). Turn 11 and 12 surveyed uses the services of collective public transport rarely and very rare. The answer „frequently" was selected in 9 cases (*Figure* 3).

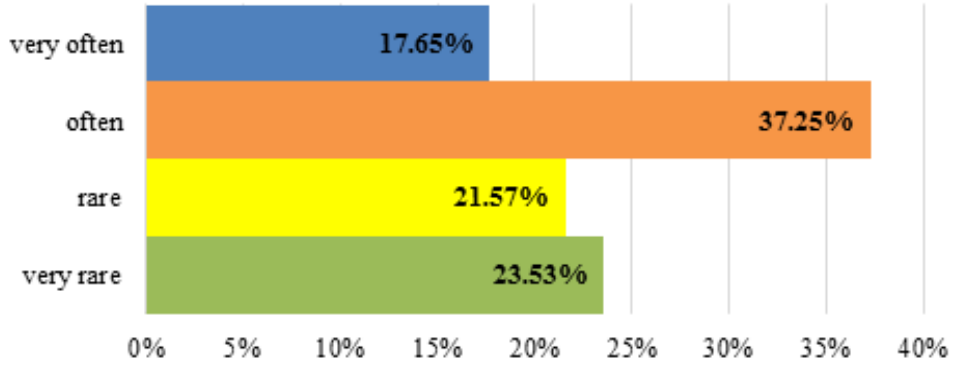

Figure 3. Frequency of the use of public transport by the respondents

Source: Own elaboration based on the conducted studies

Respondents who use public transport very often (every day) and often (1 to 3 times a week) are primarily the pupils/students and pupils/students that are professionally active. Rarely (1 to 3 times a month) are travelling by public transport as pupils/students, very rarely (a few times a year) – professionally active respondents. The respondent delivered a slight degree of disability is travelling by public transport very often, while the respondent unemployed-often. Half of the

people who do not have permission to drive the car travels by public transport every day, and the second half – 1 to 3 times a month (*Table 1*).

Table 1. Frequencies by public transport by respondents with and without driving license category B

The frequency of the use of public transport	Driving license category B "yes"	Driving license category B "no"	The sum
Very often	7	2	9
Often	19	0	19
Rare	9	2	11
Very rare	12	0	12
The sum	47	4	51

Source: Own elaboration based on the conducted studies

As is apparent from the data in *Table 1* despite the fact of having a driving licence of category B, in most cases, respondents who were eligible for this group are moving 1 to 3 times a week by public transit. On the other hand, the 12 surveyed only a few times a month the settlement services operator public transport. However, it can be said that public transport journeys are still attractive for the specified group of people.

Among both women and men is noticeable increased interest in rail transport-that mean trams. This form of transport is selected in 66.67% of the cases. Interviewed men and women had also intended to specify the time of day in which they travel mostly by public transit. The largest group of people admitted that travels by public transport between 12:00-14:00 and 6:00-10:00. These are the hours of the peak traffic (*Figure 4*).

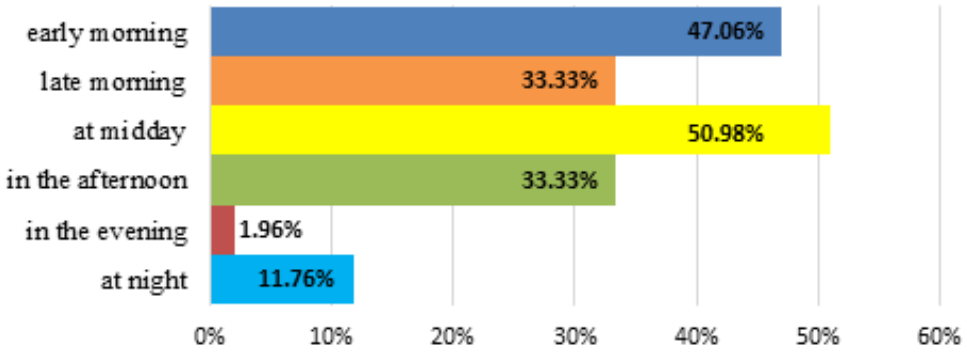

Figure 4. Time of day in which respondents most often take place journeys by public transport

Source: Own based on the studies conducted

33.33% of the total respondents travel by bus and/or tram in the morning and afternoon. In the night time 11.76% of the total respondents uses public transportation, in the evening, the least because only 1.96% of the total of the people participating in the survey. A question about the time of day of travel by public transport were the multiple-choice questions. Respondents who select only one answer most travel takes place in the morning, 75% of them are pupils or students. May be due to the fact that pupils/students arrive in the morning for classes by public transit, and then come back on foot to their houses. Respondents who gave two answers most often travel in time periods 6:00-10:00 and 12:00--14:00, 67% of those surveyed are also pupils/students. In this case, it can be concluded that the group surveyed people commute to school/college transport in both parties. Journeys in the afternoon, afternoon and night declared after 2 examined the person, most are active users. Three people claimed that most often travels by bus and/or tram from morning to afternoon. Among them were recorded after one respondent's learn/study an active professionally, one respondent active professionally and one-person learn/study.

Trends in collective public transport in Częstochowa

Completed study their own allowed in addition to demonstrate the type of means of transport, the frequency and the time of day the implementation of travel by public transport, to define priority directions of changes in the collective public transport in Częstochowa. To make this possible, it became necessary to identify the major problems in this regard. To this end, the interviewees were given a list of 11 factors that to a lesser or greater extent determine the frequency of use in public transport passenger journeys. The task of the respondents was to organize those factors in order of preference. At the first positions were found to the problems which, in the opinion of the interviewees are critical, given the functioning of public transport in Częstochowa. Results of the research were presented in *Table 2*.

Table 2. Key problems of collective public transport in Częstochowa

The position	Problems	The importance of the problem
1	Limited accessibility to transport infrastructure	4.5
2	Too low comfort (piston, no air conditioning, the presence of homeless people, the noise of vehicles, etc.)	4.2
3	Too long a journey time (caused by m.in. congestion of streets)	3.7
4	Low frequency of journeys	3.3
5	Low punctuality of connections	3.0
6	Bad technical condition of the rolling stock	2.5
7	Bad technical condition of stops and shelters	2.2

The position	Problems	The importance of the problem
8	Failure of rolling stock to the needs of people with mobility problems and mothers traveling with children in wheelchairs	1.8
9	Excessively high ticket prices	1.3
10	The low level of the safety of passengers inside the bus/tram	1.3
11	The low level of the safety of passengers during boarding and disembarking from the bus/tram	1.0

Source: Own based on the studies conducted

The most significant issue by respondents is limited accessibility to transport infrastructure. This problem, in the opinion of surveyed people has the greatest importance, because it makes it difficult or even impossible to use public transportation. The respondents in this case would this factor at position 1 or 3 in the hierarchy. Interviewees also pointed out the enormous importance of the problem which is too low comfort travel by public transport. For users of Częstochowa transport third problem is too long-time travel. Time travel according to the authors is mainly associated with the occurrence of the Częstochowa roads transport congestion phenomena and focuses on travel undertaken.

Three groups of issues that were presented above, are indicated by respondents on a higher position than even factors f.ex. low frequency of journeys and punctuality. The next three items in the hierarchy occupied the problems related to the maintenance of the public transport, as well as on the technical condition of vehicles. The importance of the problem at a level 2.5 has been assigned by the authors of the issues related to the poor technical condition of the rolling stock of public transport, the importance of 2.2 for factor bad technical condition of stops and shelters, and 1.8 for failure of rolling stock to the needs of people with mobility problems and mothers traveling with children in pushchairs. Low importance of the last listed issue in the hierarchy may be because in the study took part primarily young people. As a rule, they do not have problems with moving and do not pay more attention to the problems associated with the adjustment of means of transport for people who have difficulty moving. However, one person who admitted that he has a slight degree of disability this factor there to position 8 in the hierarchy. By analysing the collected raw data, it can be concluded that the least bothered by the passenger's transport ticket price. You can also come to the conclusion that passengers feel safe during the implementation of the transport processes of collective measures of public transport. For the factors relating to the low level of the safety of passengers inside the bus/tram and the low level of the safety of passengers during boarding and disembarking from the bus/tram were, in fact, go to the importance of the problem to level 1.3 and 1.

Presented problems, ordered by preference surveyed people to see which ones are the most significant for users of public transport in Częstochowa. The last question in the survey was designed to find out the answer to questions that authors question: what factors will encourage respondents to increase the proportion of the use of public transport for journeys? (*Table 3*).

Table 3. Passenger transport services consumers incentives to use public transport

Incentives to use public transport	Given answers	The share of answers [%]
Increase the availability of public transport	19	37.3
Increasing the frequency of crossings	19	37.3
To ensure punctuality, carriage	22	43.1
Reduce the time of travel	18	35.3
Improving the condition of stops and shelters	11	21.6
Increasing the quality of the rolling stock companies carrying out transport	27	52.9
Improving the safety of travellers	17	33.3
Adjustment of rolling stock to the needs of people with mobility problems and mothers traveling with children in wheelchairs	12	23.5
Lowering the price of the ticket for public transport	26	51.0
Other, what?	2	3.9

Source: Own based on the studies conducted

In the opinion of the polled factor that could increase the share of public transport in passenger crossings is first of all improve the quality of rolling stock performing the services. This response showed 52.9% of the total of people involved in the study. Not without significance for the respondents are also economic considerations. They claimed that the price of tickets is not the key issues of the functioning of the public transport in Częstochowa. Despite this, in the opinion of every other respondent lowering the price of the ticket for passage would contribute to increase the frequency of travel by public transport. To ensure punctuality, traffic is another matter to use the settlement service provider. This response was indicated by 43.1% of the interviewees. In two cases, 37.3% of all people who have taken part in the study, pointed out the answer: increase the availability of public transport and to increase the frequency of crossings. The introduction of activities that may contribute to improve the situation on these issues to better match public transport network and timetable to the transport needs of the public. Reduce the time of travel is a priority factor for 35.3% of the

interviewees. This activity is viable to implement. In this case the city of Częstochowa, Poland would have to consider the introduction of solutions for the favouring of bus and tram. Improving the safety of passengers is important for 33.3% of the study participants. The response of the rolling stock adjustment to the needs of people with mobility problems and mothers traveling with children in pushchairs and the improvement of the condition of stops and shelters have been selected by 23.5% and 21.6% of the interviewees. In addition, two people have defined other factors that were not considered by the person drawing up the study. These include: install monitors information as in larger cities, showing the actual time of arrival of the rolling stock and the correct synchronizing timetables, to allow better integration of urban transport.

Investment in electronic boards informing passengers at the departure of the means of transport would have been expensive. In the current realities of the local government units on a limited budget, a better solution would be to purchase modern buses and trams. According to M. Kadłubek, the use of modern means of transport (f.ex. electric buses) to the sustainable development of the urban transport settlement (Kadłubek 2015, p. 497). For the integration of urban transport is the goal more realistic. It would be possible by improving the availability of infrastructure for collective passenger transport and timetables are synchronized, the buses and trams to the main passageways.

Conclusions

Public passenger transport is an important element of the transport system in the city. Responsible for the development of urban passenger transport is the responsibility of the organizer. Organiser entrusts the execution of tasks of transport operator and/or carrier. They provide services in the field of public transport. The organiser is responsible for the development of transport planning, organizing and managing public transport public transport. A key task of the organizer is according to the article of the transport plan. This plan should contain a comprehensive description of how to implement the transport services of the public service and provide the basis for strategy development, which the plan refers. Designed strategic plans should aim first and foremost to ensure sustainable urban development. According to A. Mesjasz-Lech urban transport systems significantly impact negatively on the environment. For this reason, the transport management in cities should aim to solve environmental problems and should be treated on an equal footing with the desire for economic development of the city (Mesjasz-Lech 2016, p. 623).

J. Kabus and J. Nowakowska-Grunt in one of the publications they wrote that in the near future, it is desirable to improve the functioning of public transport both in Poland and in the County (Kabus, Nowakowska-Grunt 2016, p. 46). Based on personal research possible was the development directions of change. They should be taken into account during the development of the transport plan for the coming years for the city of the municipality of Częstochowa. The main challenge for local government units in this area is to increase the quality of the rolling stock

of performing the services. In this area of activity, the situation has already begun to change. In the years 2014-2017 Częstochowa city has purchased 50 buses, Solaris and 43 Solbus brand. These buses are modern and ecological vehicles. However, there is still a place to make certain changes in this area. It happens very often that these buses take part in accidents, and, in the case of hybrid buses to their users complain about the noise, which prevails in the interior of the vehicles. Without a doubt, this affects the reduction in the comfort of the use of public transport. Necessary in this case should also become the modernisation of rolling stock line. 13% of rolling stock are in fact trams purchased from 1975-1990.

A major determinant of which could be considered during the development of the transport plan for the city, is to lower the ticket prices for the passage or the introduction of a preferential rates for selected user groups. This action according to the respondents, would significantly increase the frequency of their journey by public transport. The crossings would become a great alternative for freight services operated cars, considering at least in terms of economic factor.

The latest how obvious actions to implement in Częstochowa is ensuring punctuality and frequency of service. According to the authors this is a key question in particular in the opinion of people. This will be a better fit of transport services to the individual needs of their users. The last key issue is to increase the availability of public transport. It seems that this issue is all too obvious. Although to this day in work areas, which are not supported by the operator of public transport. The inhabitants of these districts are forced to implement carriage of individual means of transport. Extension of public transport network and introducing or extending the communication lines could contribute to an increase in the volume of transport thereby reducing transport congestion.

It should be noted that the designed strategic objectives are identical with the objectives that you can define not only for many Polish and European cities. As J. Rymarz, J. Stokłosa and A. Niewczas citing J. Suda the fundamental objectives of the collective public transport management is to ensure punctuality, regularity and reliability of services. It is necessary to also reduce the time executing (Rymarz, Stokłosa, Niewczas 2014, p. 5542).

The task of the organizer of the public transport in Częstochowa is the inclusion of action presented to the transport plan. This will ensure the sustainable development of the city. This development is mainly due to the existence of an efficient transport system, that will provide services to the society (Oliveira et al. 2016, p. 59). Ensuring efficient transport system requires changes. These changes will be possible through the implementation of infrastructure projects. Infrastructural investments are large scale projects. Mostly they are very complex, time consuming and costly (Chadam 2016, p. 34). It is known that the changes will be strategic changes. The authors are aware that planning and implementation of actions in this area may include a long time. However, there is a need to work for their implementation.

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ORGANIZACJA I PROBLEMY FUNKCJONOWANIA PUBLICZNEGO TRANSPORTU ZBIOROWEGO NA PRZYKŁADZIE MIASTA CZĘSTOCHOWY

Streszczenie: Publiczny transport zbiorowy ogrywa znaczącą rolę w przewozach pasażerskich na obszarach miejskich. Funkcjonowanie systemu transportu pasażerskiego w miastach wymaga rozstrzygnięcia wielu trudności. Za rozwiązanie problemów transportowych odpowiada organizator publicznego transportu zbiorowego. Rodzaje barier są uzależnione w głównej mierze od tego, jakie funkcje pełni miasto. Z tego względu w artykule zaprezentowano problemy funkcjonowania publicznego transportu zbiorowego w Częstochowie. Na tej podstawie wyszczególnione zostały działania, które powinny zostać niezwłocznie wprowadzone przez organizatora, aby zachęcić osoby korzystające z częstochowskiej komunikacji miejskiej do zwiększenia częstotliwości realizowanych przejazdów. Wskazówki te winny stać się ważnym kierunkowskazem projektowanych działań w zakresie organizacji publicznego transportu zbiorowego w Częstochowie.

Słowa kluczowe: publiczny transport zbiorowy, organizator publicznego transportu zbiorowego, operator publicznego transportu zbiorowego, przewoźnik, problemy transportu publicznego

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USE OF PESTEL ANALYSIS FOR ASSESSING THE SITUATION OF POLISH TRANSPORT ENTERPRISES (PART I)

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Abstract: The objective of the article is presenting what influence on the activity of transport companies has macro-environment. In the first place the notions of macro and micro-environment have been defined. Then those elements of macro-environment that determine the functioning of Polish companies have been specified. On this basis the factors of macro-environment that are crucial for the functioning of transport companies dealing with the transport of cargo have been presented and described. Defined factors are the basis for the analysis of PESTEL transport market in Poland. Macro factors important for transport operations and PESTEL analysis will be presented sequentially in the second and third parts of the article.

Keywords: strategic management, macro-environment, microenvironment, transport company

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Introduction

Every enterprises have processes. Processes are depend on the nature of the business. According to the authors, one of the most important logistics processes realized in the enterprises, is the process of transportation. Generally transport is undoubtedly an important part of the national economy. It is the basis for its smooth functioning. Production, service and/or commercial companies can procure necessary materials, raw materials, semi-finished products or goods, and deliver ready-made products to customers with their own vehicles. When certain conditions are been fulfilled, this transport can be classified as transport carried out for company's own needs. In some situations, maintaining own transport is unprofitable for a variety of reasons. One of such reasons is the level of transport costs, which, according to K. Sukiennik, constitute a significant proportion of the costs incurred by the company and reported in the financial result (Sukiennik 2011, p. 132). It is therefore unreasonable to carry out own transport when the cost of this transport exceeds the costs of equivalent services provided by third parties. The use of external service providers may also be justified when a company does not have the appropriate quantity or types of means of transport required to fulfil orders. It is then reasonable to use the services of transport companies, implemented on the basis of outsourcing. In such a situation, cargo conveyance services are provided by specialised transport companies. These companies, by optimising the utilisation

of capacity of means of transport, can reduce unit costs of transport and improve the quality of services.

Many entities operate on the Polish transport services market. Currently the market situation of Polish transport companies is difficult. This is due, among other things, to ever-changing legal regulations governing setting up, operating and the organisation of transport services, the vulnerability of transport companies to fluctuations in market fuel prices (Kot 2015, p. 393) and the difficult international situation. This means that transport companies need to prepare, sufficiently in advance, for changes in their closer and wider environment. Changes in the market can directly or indirectly affect the situation of transport companies. Some of those changes can be predicted, but some changes cannot be prepared for beforehand. Nowadays, the changes in the functioning of enterprises on the market are the most important challenges for strategic management (Piontek 2016, p. 48;

Kościelniak, Skowron-Grabowska, Nowodziński 2017, p. 19). In order to reduce the risks associated with operating transport services it is necessary to constantly monitor the situation in the company's environment and on this basis to develop a strategic plan for the management of enterprises (Brzóska 2017, p. 69).

Macro-environment and micro-environment of transport companies

A detailed description of the conditions prevailing on the Polish transport market should be supported by a detailed analysis of macro- and micro-environment. These two concepts need to be defined first. Macro-environment is a wider environment that has a significant impact on the operation of businesses. Unilateral impact of macro-environment on businesses can be observed. This means that companies are generally not able to influence their macro-environment. However, as K. Kozioł emphasised, there are exceptions to this rule is, for example large companies (corporations). They can, to some extent, influence some selected macro-factors (e.g. political and legal factors) (Kozioł 2010, p. 78).

In turn, the micro-environment is defined as the near environment. The term “competitive environment” can also be found in the literature (Kowalczuk 2015, p. 39), reflecting “the competitive situation of a company in a sector/industry” (Wach 2004, p. 424). It is in this environment that the interactions between various economic entities and influence groups take place. In this case, economic entities (buyers, competitors, suppliers and business owners (Lewandowska 2010, p. 156)) and the previously mentioned influence groups (customers, residents, media, financial institutions, local authorities, environmental and consumer advocacy groups, trade unions, employers' associations, etc.) influence the operations of the company and vice versa. An enterprise may also influence the activities of previously specified economic entities and influence groups operating in its immediate environment.

Taking into account the above definitions, it can be concluded that the analysis of micro-environment is not universal. The assessment of the influence of individual economic entities and influence groups on the operations of the company and, vice versa, the influence of the company on the economic entities

and influence groups may differ for a variety of reasons. These reasons include especially: company size, type of business activity, area and scope of activity, competitive position in the market, etc.

In view of the information presented, it could be concluded that analysing the macro-environment influencing transport companies is based on factors which are the same for all enterprises operating in the territory of the Republic of Poland. Nothing could be further from the truth. The macro-environment analysis will vary if only because it should be prepared taking into account the particular company. Some macro-factors will be important for manufacturing companies, others for service companies, others for trading companies, yet others would take into account the industry in which the entity operates. For this reason, the authors of this article will aim to describe the impact of macro-environment on the operation of transport companies. This decision is also supported by contemporary trends. The globalization of the modern economy puts new challenges ahead of logistics (Kovacs, Kot 2016, p. 124). The globalization, which has led to an increase in the movement of all types of goods (Nowicka-Skowron, Mesjasz-Lech 2013) and the associated internationalization of Polish transport companies (influenced mainly by Poland's accession to the European Union (Jasiniak 2017), means that forecasting the future of transport companies one needs to focus on the factors affecting their operations not only regionally and nationally but on the European or even world scale, i.e. take into account the wider environment.

Macro-environment elements affecting the operations of enterprises

The kinds of factors that will allow the analysis of macro-environment will vary according to the purpose of the analysis. In the theory of strategic management a detailed description of such groups of factors can be found. G. Gierszewska and M. Romanowska listed six zones that form the basis for the analysis of macro-environment. These are: economic environment, technological environment, social environment, demographic environment, political and legal environment, and international environment (Gierszewska, Romanowska 2003, p. 34-40). K. Kozioł listed eight areas within a company's wider environment. These areas, called segments, include: economic, legal, political, technological, social, demographic, international, and natural segments (Kozioł 2010, p. 79). K. Kozioł separated political and legal factors which, according to Gierszewska and Romanowska, comprised one group. In addition, the natural segment appeared in Kozioł's analysis. The natural segment was also mentioned in another publication. In this case, however, the segments were interchangeably referred to as macro-environmental factors. N. Assylbekova systematised macro-environment factors in terms of their impact on the competitiveness of enterprises. According to Assylbekova, these factors include economic, political-legal, demographic, socio-cultural, technological and natural factors (Assylbekova 2016, p. 156).

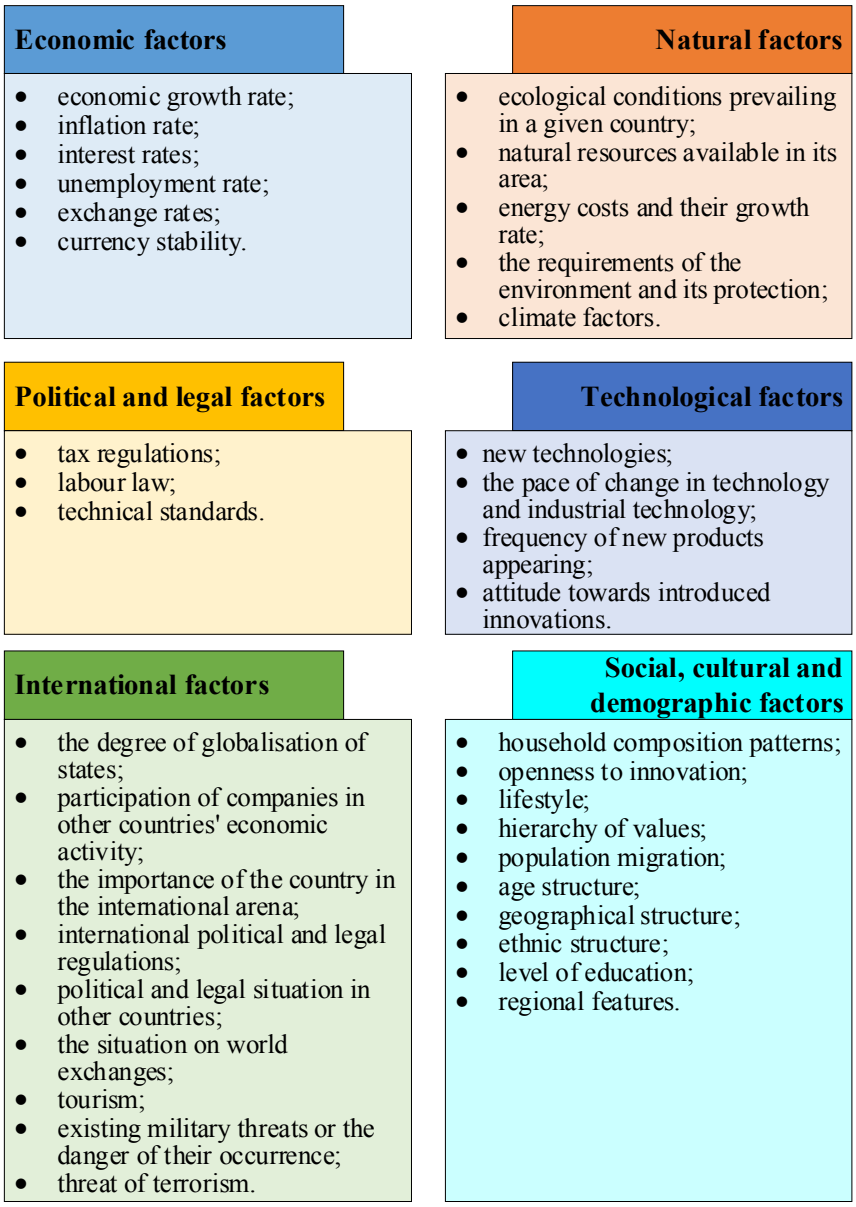

Figure 1. Macro-factors affecting the functioning of enterprises

Source: Study based on (Assylbekova 2016, p. 156-158; Kozioł 2010, p. 81; Kozyra 2006, p. 3)

As can be concluded from previous considerations, macro-environment is analysed in the same way. It does not matter whether the individual elements are named factors, zones or segments. It is also irrelevant that they are considered in terms of business risk or business competitiveness. They all allow for the determination of the impact of the wider environment on the entities of the national

economy. That's why there is no reason not to use these elements to assess the present and future situation in the transport services market. Macro-factors are presented in *Figure 1*.

Economic factors include those that describe the condition of the economy (Assylbekova 2016, p. 156), reflecting the market potential of a given country (Lewandowska 2010, p. 156). All these factors are significant for determining the state of the economy and should be considered holistically.

The social, cultural and demographic segment also has a significant impact on the operation of businesses. Of particular importance here are factors such as age, education, and economic activity of the population as well as people's lifestyle, consumption trends, and adaptation of innovative solutions emerging on the market. Undoubtedly, socio-economic factors have a significant impact on businesses (including transport companies) in the global economy (Odlanicka--Poczobutt, Knop 2016, p. 368).

Political and legal factors primarily determine the influence of the state on economic processes (Griffin 1998, p. 105-107). These include, above all, regulations that stimulate or inhibit the entrepreneurship among the entities in the national economy.

Another of the macro-environmental factors – technology development – is closely related to the pace of changes in technology and industrial technology at national, European and international levels. Introducing innovation in enterprises is important for building competitive advantage (Nowakowska-Grunt, Piersiala 2014, p. 145) and is crucial for economic growth (Zimmer, Mierzwa 2017, p. 8-9). According to A. Lemańska-Majdzik and M. Okręglicka, it is currently the implementation of information and communication technologies in enterprises that greatly affects the development of small and medium-sized enterprises (Lemańska--Majdzik, Okręglicka 2017, p. 48). Implementing technological changes often forces companies to reorganise their operations, in other words, to introduce change. Changes are often associated with a certain level of risk. In addition, innovative technologies are capital-intensive. As a rule, it's large companies with a well-established market position that can afford to take on such risks and incur large expenses.

Natural factors also have a significant impact on the type of business undertaken by companies. Those primarily refer to the geographic location and the climate conditions of a given area. Access to natural resources that are at the disposal of companies is also necessary. Availability of energy and the cost of using that energy in production, service and/or commercial activity is also significant for business operations.

At present, the last group of factors – the international factors – has acquired a special significance. The situation in the world markets has a strong influence on the Polish market sentiment. The opening of the borders and the creation of conditions for the free exchange of goods and services between the Member States of the European Union have had a significant impact on the range of business operations. At the same time, the conditions prevailing in world markets, the increasing danger of armed conflict or terrorist attack, adversely affect the situation

in the domestic market. At present, international regulations aiming to reduce the negative impact of road transport on the environment are also highly significant for the operation of transport businesses. The European Union has been for many years addressing environmental issues, which has become particularly important for ensuring sustainable development of the transport sector (Kadłubek et al. 2016).

A number of factors influence the activities of companies in the macro scale. Their differentiation depends on the type of activity a given entity of the national economy engages in. The size of the company, the range of its activity and its financial results are also important. Identifying factors that are significant from the business point of view may be based on an analysis of macro-environment. These issues will be addressed in the second part of the article. Factors derived from the wider business environment which affect the sentiment on the transport market and, above all, affect the condition of transport companies engaged in cargo transport will be presented.

Conclusions

Transport constitutes the basis of the economy. Transport operations allow enterprises with different business profiles to obtain supplies and distribute products and services. Where using own transport is unprofitable for a variety of reasons, it is possible to use transport services. These services are carried out by specialised external companies, so called freight carriers. Transportation of goods by road is noticeably increasing. According to B. Skowron-Grabowska, K. Sukiennik and T. Szczepanik, the growing popularity of road transport is a result of competitive supply prices compared to other means of transport (Skowron-Grabowska, Sukiennik, Szczepanik 2015). Increasing popularity of road transport has contributed to the increase in the number of entities providing services in the transport of goods.

The operations of these businesses are influenced by many factors. One of the groups of factors that affect the situation of carriers, and which carriers have no influence on (or can only influence to a small extent), are macro-environment factors. Those include: economic, political-legal, socio-cultural, technological, natural, and international factors. The impact of macro-factors on transport companies changes over time. The survival of these companies depends on the introduction of new services (Skowron-Grabowska 2014, p. 35) that take account of trends in this area.

There are numerous specific factors that create the macro-environment of a company. Some stimulate the development of the transport services market, others, on the contrary, inhibit such a development. What is important is that businesses cannot directly influence those factors. They can only monitor the situation on the domestic, European and world markets and adjust the directions of their own operation to the prevailing conditions.

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WYKORZYSTANIE ANALIZY PESTEL DO OCENY SYTUACJI POLSKICH FIRM TRANSPORTOWYCH (CZĘŚĆ I)

Streszczenie: Celem artykułu jest zaprezentowanie wpływu, jaki na działalność przedsiębiorstw transportowych ma makrootoczenie. W pierwszej kolejności zdefiniowano pojęcia makrootoczenia i mikrootoczenia. Następnie wyszczególniono te elementy makrootoczenia, które determinują funkcjonowanie polskich przedsiębiorstw. Na tej podstawie zaprezentowano i opisano czynniki makrootoczenia, które są istotne dla funkcjonowania firm transportowych zajmujących się przewozem ładunków. Zdefiniowane czynniki posłużą jako baza do sprzędzenia analizy PESTEL rynku transportowego w Polsce. Czynniki makrootoczenia istotne dla prowadzenia działalności transportowej oraz analiza PESTEL zostanie zaprezentowana kolejno w drugiej i trzeciej części artykułu.

Słowa kluczowe: zarządzanie strategiczne, makrootoczenia, mikrootoczenie, przedsiębiorstwo transportowe

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APPLICATION OF OUTSOURCING OF LOGISTICS SERVICES IN COMMERCIAL ENTERPRISES

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Abstract: The aim of the paper is to discuss the outsourcing of logistics services as a component to support effective management in commercial enterprises. The paper presents the fundamentals of management and characteristics of outsourcing with the most important causes of their application. The range of logistics services was discussed and the outsourcing of logistics services and benefits of its application were brought closer to the reader. The analysis of the effect of outsourcing of the logistics services on the activities of commercial enterprises was also presented.

Keywords: outsourcing of logistics services, commercial enterprise, management

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Introduction

The speed of changes in the world economy is proportional to the technological progress (Sadowski 2008, p. 129-132). A dynamic development of new technologies, growing global competition and consolidation of enterprises have been observed in the last years (Sadowski 2015). Management, especially in the area of distribution logistics, represent a challenge for commercial companies, especially in light of increased competition in the market (Skowron-Grabowska, Mesjasz-Lech 2016). Commercial enterprises are forced to search for sources of savings while maintaining the highest quality. Consequently, enterprises see more and more benefits of using external service providers and are more often willing to outsource part or all processes. This allows for focusing of attention on core activities, thus ensuring the specialized services in a specific area.

Effective management in the enterprise: outsourcing

The progressing globalization processes caused, among other things, by the development of the international logistics (Skowron-Grabowska et al. 2017, p. 89-102), are reflected in the availability and implementation of the most modern technologies, searching for resources or appearance of organizations that allow for global activities (Seroka-Stolka, Nowakowska-Grunt 2012). More and more frequent use of outsourcing is aimed at facilitation of the flow of products and services, thus becoming an indispensable link in the logistics chain (Solakivi et al.

2011, p. 133), created in order to more effectively meet the demand for logistics services. Outsourcing represents the solution which is adjusted to the actual needs and supports efficient management.

Management is a complex concept that has been defined from various standpoints. F.W. Taylor defines management as a "meticulous familiarizing with what is expected from people and then making sure they perform it in the best and cheapest manner" (Griffin 2006, p. 36). Acoording to R. Mantenfifel "the aim of management is to ensure maximal achievement of the objectives set by the enterprise. This is possible only if the enterprise uses the means of production, technologies and labour factors" (Czeczka, Szpitter 2010, p. 41). P. Drucker characterized management as "taking measures aimed at the achievement of goals" (Koźmiński, Piotrowski 2006, p. 62-67). According to E. Lipiński, management is a "key determinant of success or failure of the enterprise" (Brilman 2002, p. 19). For H. Mintzberg "management is not only about the performance of functions but also about what the managers do" (see: Mintzberg 2013, p. 36; Lamond 2004, p. 354). The essence of management is to take decisions on the choice of goals and achievement of these goals in an effective and efficient manner (Griseri 2002, p. 12). This means the activities that result in the achievement of the goals while limiting waste.

Development of enterprises, sectors and markets has driven the necessity to develop the management methods and implementation of new tools to support management (Pettinger 2007, p. 53). This is aimed at adjustment to the needs of commercial enterprises in order for them to function efficiently and effectively (Nowicka-Skowron 2000, p. 136). Therefore, outsourcing can be viewed as a management method used to achieve the previously set goals through effective utilization of the resources.

The term outsourcing stems from English words *outside – resource – using*, (Gołembska 2010, p. 129). Outsourcing means contracting-out certain activities to an external organization (Kopczyński 2010, p. 46). *Wydzielenie* (*separation*) or *wyodrębnienie* (*isolation*) are the terms used in Poland to describe outsourcing (Trocki 2001, p. 53). Two components can be distinguished in outsourcing. The first of them is the initiative where a specific area of activities is contracted out to another company. The second component concerns a long-term partnership with the external organization, viewed as a process (Kopczyński 2010, p. 48). E. Gołembska defined outsourcing as "initiatives aimed at separation of the functions performed previously by the enterprises from the organizational structure and performance of these activities in a more effective manner by other enterprises" (Gołembska 2010, p. 129). Analysis of the characteristics features of outsourcing presented in the literature reveals that this is the method of management that consists in the transfer of responsibilities for certain areas of business activity to the specialized external partner. Outsourcing is used to produce both qualitative and quantitative benefits and provide the opportunities for the development of core competencies of the enterprise and adding new value to improve market advantage and help enterprise grow.

The most important reasons for using outsourcing emphasized by the Outsourcing Institute include (Jonkisz, Jaroszyński 2008, p. 7-10):

- Control and reduction of operating costs.
- Focus of the enterprise on core activities.
- Access to the best quality of production capabilities.
- Opportunity to use and transfer internal resources for other purposes.
- Access to resources the enterprise does not have.
- Faster benefits of restructuring.
- Coping with the function which is difficult to be performed or impossible to control.
- Acquisition of capital.
- Division of risk.
- Inflow of cash.

Benefits of using outsourcing are mainly focused on the financial aspects, such as limitation of costs by using external resources and acquisition of capital for core activities of the enterprise. In addition to these benefits, the enterprise gains access to resources and technologies of external suppliers, which help company utilize organizational resources to achieve other goals. Outsourcing may concern components, individual activities, functions and processes of business activity. It should be noted that outsourcing represents the philosophy that seeks the best solutions for a specific task to be solved in the cheapest manner possible.

Scope of logistics services for commercial enterprises

Flow of products and information in commercial enterprises is dynamic, thus specialization is needed at any stage of order performance. The solution is to separate logistics functions and contract out the logistics services.

Logistics services include services of fright forwarding, transport, warehousing and related services and those that support the process of flow of goods between the supply chain links. The areas of logistics activities taken by logistics service providers in commercial enterprises include supply and distribution (Jeszka 2009, p. 59). The logistics services are organized and provided by specialized enterprises which manage the logistics system of another enterprise. (Gołembska 2010, p. 268) Logistics services can be grouped according to their characterization into four groups. The tasks and groups of tasks contained in these groups represent comprehensive logistics services which are provided by the specialized entities (*Figure 1*).

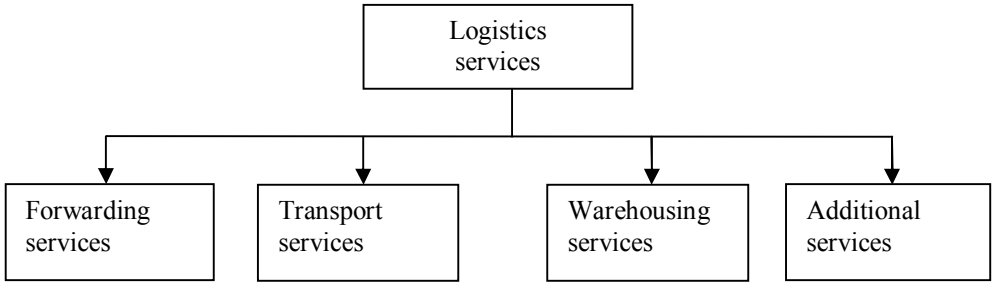

Figure 1. Division of logistics services

Source: Author's own elaboration based on (Jeszka 2009, p. 59-60)

The array of logistics services is formed by forwarding, transport, warehousing and additional services whose common feature is organization of the flow of goods and information (Gupta et al. 2011, p. 775-776). According to E. Gołembska, development of the form of the logistics service and its scope is determined by the four components presented in *Table 1*.

Table 1. Scope of logistics services

LOGISTICS SERVICE			
Warehousing and inventory management	Transportation and cargo services	Market research and creation of the marketing information system	Transaction financing, banking services and insurance

Source: Author's own elaboration based on (Gołembska 2010, p. 271)

These elements refer not only to warehousing and transportation of goods but also to other core areas, such as information management or financial services (Rydzkowski 2011, p. 13). The core for the logistics services is activities such as transport, warehousing, market research and financing of activities (Brzozowska, Senczyna 2017), which determine the level of comprehensive logistics services for commercial enterprises.

Outsourcing of logistics services

The area of activity of current commercial enterprises is optimization of logistics activities through contracting them out to specialized logistics operators. J. Witkowski characterized logistics outsourcing as "separation of resources and using logistics services offered by previously internal specialized entities" (Witkowski 2010, p. 59). The use of outsourcing gained in popularity very fast due to the growing needs in the markets. The reasons for the development of outsourcing logistics services include (Kozłowski, Sikorski 2009, p. 114):

– focus on core activities to improve efficiency,

- increase in opportunities to respond to changes in the environment,
- improved customer satisfaction,
- enhanced quality and productivity,
- access to competencies and technologies previously unavailable to the organization,
- reduction in investments for the logistics purposes,
- expansion by using partner's potential,
- replacement of fixed costs into variable costs,
- other reasons, such as improvement in credibility through cooperation with prestigious partners.

The use of outsourcing logistics services brings measurable benefits through the proper utilization of the potential of this method. Major benefits for commercial companies offered by the outsourcing of logistics services include in particular (Krzyżaniak, Hentschel 1999, p. 86):

- labour specialization caused by greater confidence in performance of certain functions,
- savings in financial resources through limitation of expenditures on the logistics infrastructure,
- opportunities for redirecting of the released human resources to other functions.

Benefits management opens up opportunities for the commercial enterprise to focus on core activities in order to save time and financial resources.

Other benefits of outsourcing of logistics services include (Kowalczewski, Nazarko 2006, p. 43):

- opportunities for new market entries,
- greater flexibility compared to the conditions of the environment,
- improved competitiveness,
- opportunities to increase the customer service level.

Benefits management opens up opportunities for the commercial enterprise to focus on core activities in order to save time and financial resources (Liu et al. 2015, p. 43-44). Internal benefits obtained by commercial companies through outsourcing of logistics services translate into the external relations with suppliers and customers, leading to the increased range of activities, improved competitive situation and improved quality of services. Using the external logistics services, commercial enterprises are provided with specialized and reliable services without the need for incurring costs which would be generated during organization of logistics activities by the enterprise and costs of maintaining the logistics infrastructure. Consequently, time savings and spared resources can be used to develop core activities thus increasing effectiveness. Undoubtedly, one of the benefits is enhanced satisfaction of partners who cooperate with the commercial enterprise and customers through professional services, which translates into higher level of customer service and achievement of the competitive advantage over competitive commercial companies.

Effect of outsourcing of logistics services on activities of commercial enterprises

Commercial enterprises are the entities that develop dynamically, with a substantial role played by customer service. Performance of logistics functions by specialized entities is aimed at the improvement in the quality of performed tasks, reduction in financial expenditure and improvement of services in the areas separated within the outsourcing of logistics services. The survey of commercial enterprises was aimed to verify the effect of the outsourcing of logistics services on operation of commercial enterprises. The survey was conducted in a group of 63 commercial enterprises from September to December 2017 using the survey questionnaire. The collected and analysed results are presented below.

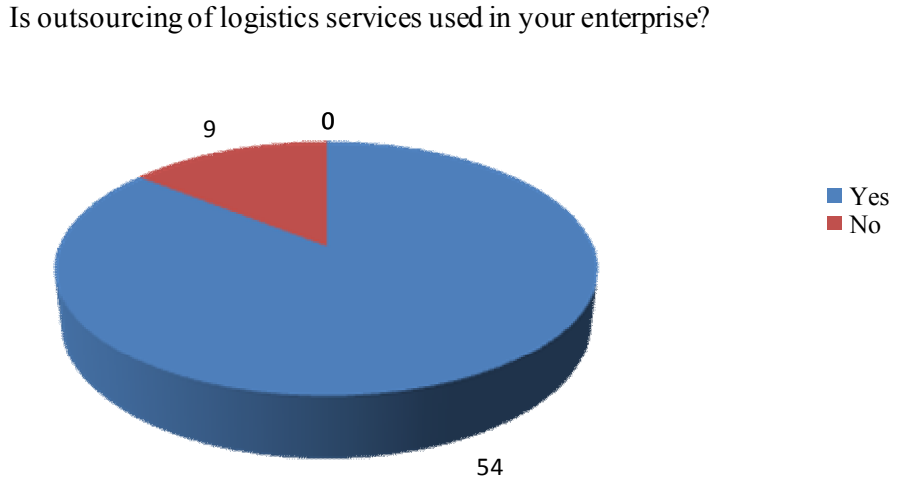

Figure 2. The use of outsourcing of logistics services in commercial enterprises

Source: Elaboration based on the author's study

Figure 2 presents the answers of the respondents concerning the use of the outsourcing of logistics services. Of all the enterprises studied, 54 confirmed the use of outsourcing of logistics services, accounting for 86% of the research sample.

Figure 3 shows the answers provided by the respondents concerning logistics services which were contracted out.

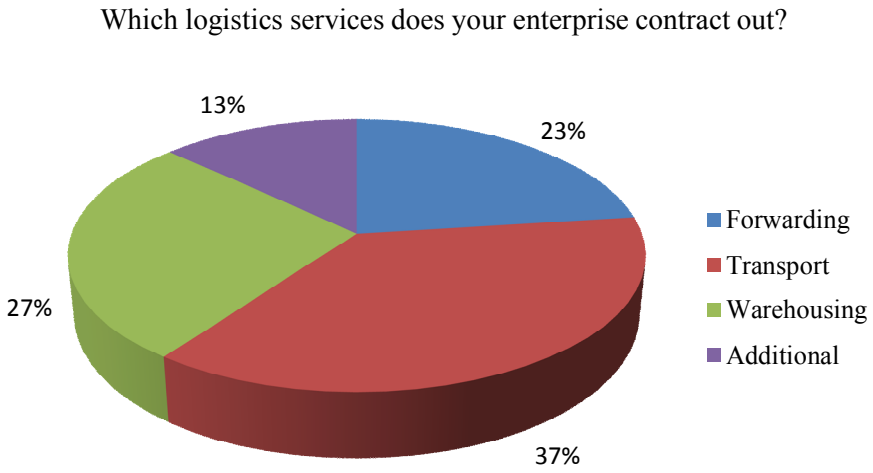

Figure 3. Logistics services contracted out in commercial enterprises

Source: Elaboration based on the author's study

As can be seen in *Figure 3*, the services which are mostly contracted out include transport and warehousing and, less frequently, forwarding and additional services. *Figure 4* illustrates the degree of satisfaction of commercial enterprises with logistics services.

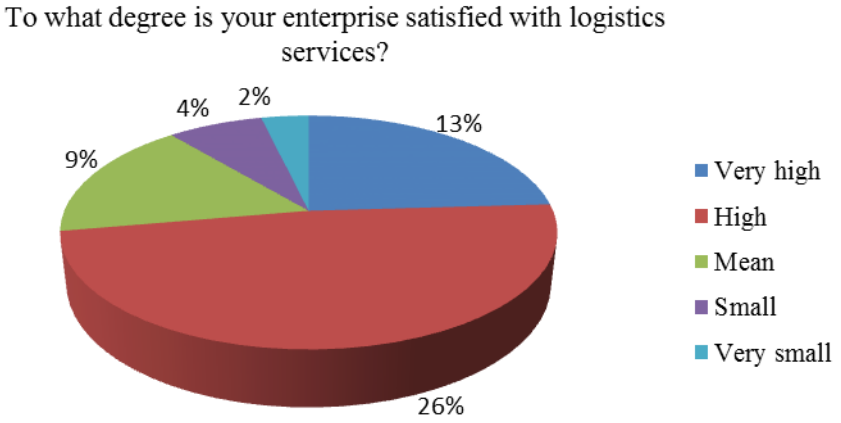

Figure 4. Degree of satisfaction of commercial enterprises with logistics services

Source: Elaboration based on the author's study

Figure 4 presents that the enterprises studied considered their satisfaction with logistics services as high. This can mean that the logistics services are adjusted to the needs of commercial enterprises, which results from close cooperation with logistics operators. *Table 2* presents the effect of the use of outsourcing in individual areas on functioning of the enterprise.

Table 2. Effect of application of the outsourcing of logistics services in individual areas on enterprises functioning

How do you assess the effect of application of the outsourcing of logistics services in individual areas on enterprises functioning?					
	Answers				
Answers	**very high**	**high**	**mean**	**small**	**very small**
Opportunities for new market entries	11	20	10	9	4
Greater flexibility compared to the conditions of the environment	15	18	12	5	4
Improved competitiveness	22	21	8	3	0
Improved customer service level	23	19	7	5	0
Labour specialization caused by greater confidence in performance of certain functions	34	18	2	0	0
Savings in financial resources through limitation of expenditures on the logistics infrastructure	50	4	0	0	0
Redirecting of the released human resources to other functions	44	10	0	0	0

Source: Elaboration based on the author's study

Table 2 shows that the application of the outsourcing of logistics services had the biggest effect on saving financial resources through limitation of the expenditures on logistics infrastructure, opportunities for redirecting of released human resources to other functions and labour specialization. According to the respondents, outsourcing of logistics services led to the substantial improvement in competitiveness and the level of customer service. Outsourcing of logistics services

had a significant effect on all the indicated areas. This may suggest the importance of the logistics functions in the commercial enterprises and quality of the outsourced logistics services. *Figure 5* presents the evaluation of the effect of the outsourcing of logistics services on the improvement in activities of commercial enterprises.

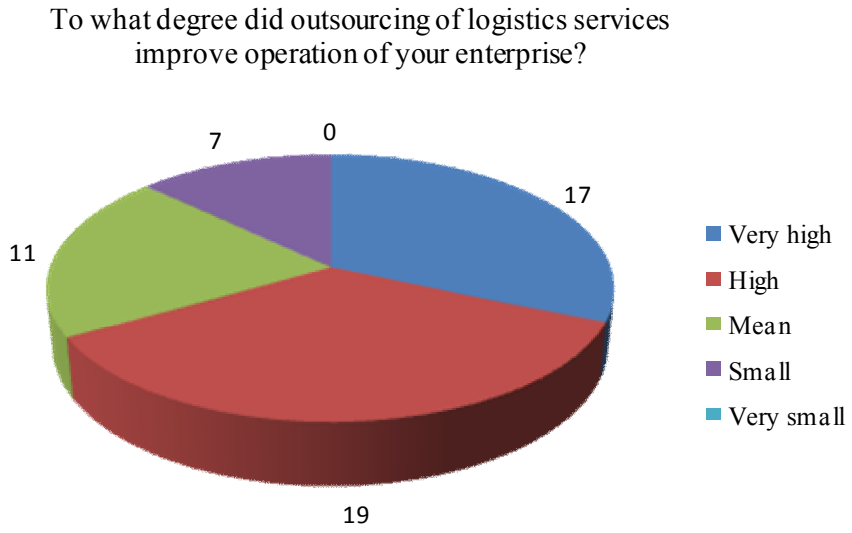

Figure 5. Evaluation of the effect of the outsourcing of logistics services on the improvement in operation of commercial enterprises

Source: Elaboration based on the author's study

Figure 5 shows that nearly 70% of commercial enterprises indicated that the application of the outsourcing of logistics services had improved their operation. Therefore, the commercial enterprises assessed the outsourcing of logistics services positively due to the achievement of measurable benefits.

Conclusions

The study showed that commercial enterprises use and notice the benefits of the outsourcing of logistics services. Most of them are satisfied with using the outsourcing of logistics services and positively assess its effect on the activity of the entire enterprise. Commercial enterprises responded that the use of outsourcing of logistics services has the biggest effect on savings of financial resources, opportunities for redirecting of released human resources to other functions and labour specialization. The respondents also showed that the outsourcing of logistics services substantially improves competitiveness and the level of customer service. Through concentration on core competencies, the enterprise can offer higher

flexibility in adjustment of the products and services to the customers' needs. The benefits for external enterprises include the opportunities of using knowledge to cooperate with other entities and increase turnover. This may explain why the use of outsourcing of logistics services is becoming a noticeable trend in modern enterprise management.

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ZASTOSOWANIE OUTSOURCINGU USŁUG LOGISTYCZNYCH W PRZEDSIĘBIORSTWACH HANDLOWYCH

Streszczenie: Celem artykułu jest przedstawienie outsourcingu usług logistycznych jako elementu wspomagającego efektywne zarządzanie w przedsiębiorstwach handlowych. W publikacji zaprezentowano podstawy zarządzania oraz cechy outsourcingu wraz z najważniejszymi przyczynami jego stosowania. Przybliżono zakres usług logistycznych, omówiono outsourcing usług logistycznych oraz korzyści płynące z jego zastosowania. Dokonano także analizy wpływu outsourcingu usług logistycznych w przedsiębiorstwach handlowych na ich działalność.

Słowa kluczowe: outsourcing usług logistycznych, przedsiębiorstwo handlowe, zarządzanie

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BENCHMARKING AS MAIN TOOL FOR MANAGEMENT IN PROCESS OF THE DISTRIBUTION OF ELECTRICAL ENERGY IN DYSTRIBUTION COMPANIES

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Abstract: The report presents the methodology of benchmarking as one of the key tools in management of the sector of energy distribution. It enables better functioning of enterprises due to comparing their functioning in various profiles and drawing conclusions out of these comparisons. The methodology of benchmarking for distribution companies in Poland is used to a very limited extent. However, it is expected that its role in the decision making process in the energy sector will grow significantly. The report describes a method, which enables objective comparative analysis of distribution companies according to the efficiency of energy distribution, taking into account the specificity of each company. Benchmarking by stimulation to decreasing of costs leads to creation of competitiveness of a distribution company.

Keywords: benchmarking, network, distribution energy

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Introduction

The experience of the more developed energy markets proves that existence of market competition brings benefits to all of its participants. An example of success can be the British energy market, where liberalisation proved the theory that market mechanisms lead to decreased energy prices. The results of the introduction of competition in the Polish power energy sector could result only in maintaining prices at the lowest justified level (stable price level, attractive to the economy, enabling domestic and foreign competition), but also better allocation of funds, reduction of costs with improved state of energy safety, reduction of labour costs, optimisation of supply, rationalisation of demand and improved position of the consumer. So, the benefit would be the improved customer service, both for an enterprise and individual receiver. The implementation of the competitive mechanisms in the power energy sector will be the most effective way to force efficiency, where it is only possible. Where it is not possible, efficient regulation should be implemented (Andrzejczuk 2002; Brzozowska, Nowakowska 2011; Kot, Starostka-Patyk, Krzywka 2009; Potacan, Nedelko 2017; Brzóska, Jelonek 2015; Skowron-Grabowska, Mesjasz-Lech 2016).

Benchmarking in the energy distribution

The benchmarking methodology is commonly used in the European Union and the USA, where it is used practically in all sectors of the economy. In the power energy sector, it is used intensively. Analyses with usage of this tool are aimed at comparison of functioning of the distribution companies. The concept of benchmarking in this field consists in measuring results in the situation where there is no price competition. Benchmarking may consist of simple ratio analysis (unit cost, the share of administrative expenses in total costs) or analysis of more complicated statistical models (Szkutnik 2002). The companies have different network and customer structure. Thus, the simple ratios like costs for one kWh or costs for one km of line are not valuable ratios for measuring of efficiency. The method "network size" developed by PA Consulting Group (*Benchmarking Is Coming* 2002) is a method of evaluation of results of the distribution company through association of costs with the total size of the distribution network. Each element of the network is evaluated as a factor generating costs. These factors are converted through weights stemming from the average costs of distribution of the company. In this way one can compare total results of companies having different network structures.

In the model the following items are compared:

- operating costs of the distribution and transit network up to 150 kV,
- costs of the network depreciation,
- costs of settlement of receivers and customer service.

The Faculty of Electrical Engineering of the Technical University of Częstochowa has broad experience in conducting comparative analyses (Slack, Chambers, Johnson, Betts 2006). The methodology of taxonomy analysis based on the Prof. Hellwig method has been used, introducing so called objectivation of definite comparisons. This methodology laid the foundations of software MONITORING, implemented in a dozen of distribution companies in Poland. The software is a helpful tool for the management used for evaluation of the functioning of energy regions of a distribution company.

Multidimensional analysis of energy losses

The efficiency of the functioning of the network of a distribution company is evaluated on the basis of analysis of percentage loss ratio. However, there are some doubts in case of necessity to compare different distribution companies basing on this ratio. Although it is a relative figure as losses relate to energy introduced to the distribution company, such ratio neglects some structural features, which have impact on its value. Certain objective correction of the ratio for each distribution company is required. This is done by the following algorithm below:

The starting point for analysis is the newly construed ratio – *the reaction ratio*, which was elaborated on the basis of research with usage of software STRATY`2002 PLUS [LOSSES'2002 PLUS] – the most recent version of the existing software STRATY`96, commonly used in distribution companies. The

reaction ratio defines to which extent energy losses will change if the energy increases by the same value for different network levels. Such ratios are comparable among distribution companies as they contain all attributes necessary for making comparisons. Calculations of the ratios for the representative distribution company had the following results:

- network of 110 kV; $w_{r110} = 1.073$
- network of medium voltage; $w_{rSN} = 1.680$
- network of low voltage; $w_{rnN} = 2.830$

Based on the analysis you can see the diverse impact of the flowing energy on the ultimate level of losses in the distribution network of a company. These ratios will be used for estimation of the corrected loss ratios for distribution companies, which can be used as a basis for comparison, because they possess all features required for such comparisons. The data packages need the main information about electricity energy in all levels of network and technical infrastructures lenght of lines and numbers of substations. As mentioned earlier, with usage of software STRATY`2002 PLUS one can conduct appropriate calculations and achieve ratios, which will enable comparisons among distribution companies. The following data constitutes an example of results from calculations:

A – Technical losses in low voltage network [MWh]
B – Technical losses in medium voltage network [MWh]
C – Technical losses in 110 kV network [MWh]
D – Total technical losses [MWh]
$\Delta E_{b\%}$ – Total balance sheet losses [%]

Co-efficient $\Delta E_{b\%}$ is an ultimate distinguishing feature of the functioning of the network of the distribution company.

The corrected loss ratio for the distribution company is as follows:

$$W_{rs} = \left(\frac{C}{D} \times w_{r110} + \frac{B}{D} \times w_{rSN} + \frac{A}{D} \times w_{rnN}\right) \tag{1}$$

where: W_{rs} – the reaction ratio of the distribution company
w_{r110} – reaction ratio of the 110 kV network
w_{rSN} – reaction ratio of the medium voltage network
w_{rnN} – reaction ratio of the low voltage network

$$\Delta E_{bs\%} = \Delta E_{b\%} \times \frac{W_{rsu}}{W_{rs}} \tag{2}$$

where: $\Delta E_{bs\%}$ – the corrected energy loss ratio of the distribution company
$\Delta E_{b\%}$ – the original energy loss ratio of the distribution company
W_{rsu} – the average energy loss ratio of the distribution company

calculated as:

$$W_{rsu} = \frac{\sum_{i=1}^{K}\sum_{k=1}^{N} W_{rsi}}{(N \times K)} \qquad (3)$$

where: K – number of distribution companies being evaluated
N – number of years of observations, assumed $N = 5$

Below is the analysis of correction of losses in 5 distribution companies. The original data is enclosed in *Table 1*.

Table 1. Original data for calculation of the corrected loss ratio

Distribution company	$\Delta E_{b\%}$	$\frac{C}{D}$	$\frac{B}{D}$	$\frac{A}{D}$
SD1	14.5	0.15	0.42	0.43
SD2	8.9	0.45	0.35	0.20
SD3	12.1	0.25	0.35	0.40
SD4	10.2	0.30	0.40	0.30
SD5	6.5	0.55	0.30	0.15

Source: Own study

The necessity of corrections or objectivation of parameters used in the process of benchmarking has been also underlined by A. Auer (Auer 2001) – only objects that fulfil requirements of comparisons can be compared.
Figure 1 depicts the results of the conducted research as well as original loss ratios of different distribution companies.

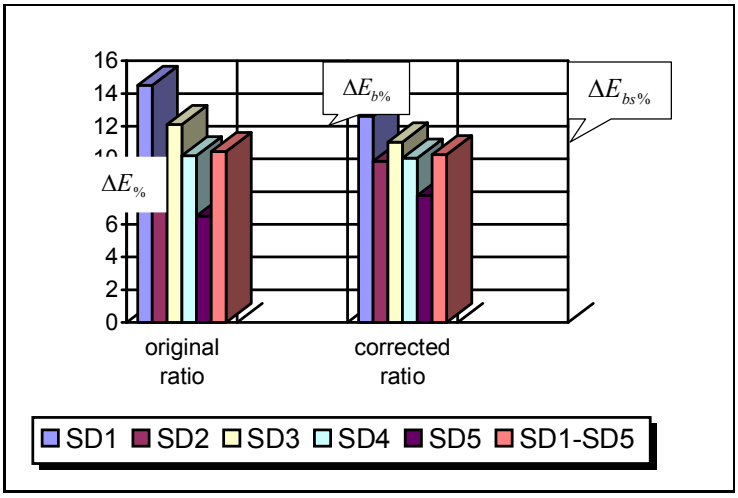

Figure 1. Original and corrected loss ratios of the distribution companies

Source: Own research

Based on the graph above, it can b stated that the corrected ratios have different values. Generally, correction results in smaller differences between companies characterised by the lowest and highest loss ratios i.e. SD1 and SD5, so:

– original value $\delta = 8\%$
– corrected value $\delta = 4.86\%$

Moreover, it is interesting that average values of the loss ratio before and after correction don't differ much (10.44% and 10.44%), which proves the correctness of the method used for objectivation of the loss ratio.

Figure 2 depicts percentage changes of the loss ratio of different distribution companies referred to the their original values.

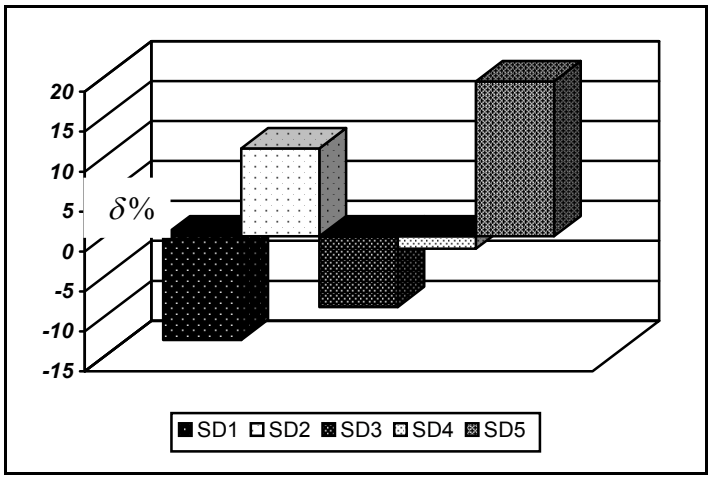

Figure 2. Percentage changes of the loss ratio of different distribution companies referred to the their original values

Source: Own research

As presented above, it is possible to objectivate parameters of distribution companies related to general costs as well as costs at particular voltage levels, which leads to effective benchmarking.

However, correction must be preceded by the introduction of new ratios – cost creation ratios, which are defined as follows:

$$W_{kks} = \left(\frac{L_{110}}{L_c} \times w_{kk110} + \frac{L_{SN}}{L_c} \times w_{kkSN} + \frac{L_{nN}}{L_c} \times w_{kknN}\right) \qquad (4)$$

where: W_{kkss} – cost creation ratio of the distribution company

w_{kk110} – cost creation ratio in the 110 kV network

w_{kkSN} – cost creation ratio in the medium voltage network

w_{kknN} – cost creation ratio in the low voltage network

L_{110} – length of 110 kV network in the area of the distribution company

L_{SN} – length of medium voltage network in the area of the distribution company

L_{nN} – length of low voltage network in the area of the distribution company

L_c – total length network in the area of the distribution company

Cost creation ratios are based on the following formulas:

$$w_{kk110} = \frac{k_{jL110}}{k_u} \tag{5}$$

$$w_{kkSN} = \frac{k_{ST110/SN} \times \frac{N_{ST110/SN}}{L_{SN}} + k_{jLSN}}{k_u} \tag{6}$$

$$w_{kknN} = \frac{k_{STSN/nN} \times \frac{N_{STSN/nN}}{L_{nN}} + k_{jLnN}}{k_u} \tag{7}$$

where: k_{jl110} – unit cost of construction of the 110 kV line [PLN/km]

k_{jLSN} – unit cost of construction of the medium voltage line [PLN/km]

k_{jLnN} – unit cost of construction of the low voltage line [PLN/km]

$k_{ST110/SN}$ – unit cost of construction of the station 110/medium voltage [PLN/station]

$k_{STSN/nN}$ – unit cost of construction of the station medium/low voltage [PLN/station]

k_u – average unit cost of construction of the distribution network is:

$$k_u = \frac{(k_{jL110} + k_{ST110/SN} \times \frac{N_{ST110/SN}}{L_{SN}} + k_{jLSN} + k_{STSN/nN} \times \frac{N_{STSN/nN}}{L_{nN}} + k_{jLnN})}{3} \tag{8}$$

The objectivation of the corrected general operating costs is done with usage of the below formula:

$$K_{DSDs} = K_{DSD} \times \frac{W_{kks}}{W_{kksu}} \tag{9}$$

where: K_{DSDs} – corrected operating costs of the distribution company

K_{DSD} – original operating costs of the distribution company

W_{kksu} – average cost creation ratio is calculated as:

$$W_{kksu} = \frac{\sum_{i=1}^{K} W_{kksi}}{K} \tag{10}$$

where: K – number of distribution companies being evaluated

Software MONITORING

Similar corrections can be done for operating costs related to specific voltage level. In such a case, the correction is done only with ratios related to that voltage level.

The corrected coeficients we used to special program MONITORING.

To the analysis and estimations of effects of the management the distribution of the electrical energy proposes the use of modified by the Author the programme MONITORING to the practical analysis of the comparative activity of energy-regions in distribution firms.

The programme uses to the analysis most essential units describing the activity of units. There are both technical parameters as also economic. Across comparative calculations one can qualify the market position of firms. Possible is also the simulation of the permissive strategy on the improvement of the activity and also of the position competitive.

This estimation executed is basing on following, most essential in the activity of the region parameters: The amortization, remaining costs, the sale of the energy from the low voltage network, the sale of the energy from the medium voltage network, generic costs together, the coefficient of balansing losses, the length of the line of the low voltage and medium voltave, the number of the station points of the purchase the network of the low and medium voltage, sale values of the electrical energy to small and great receivers and the level of the service of the customer.

As result of of analyses receives two kinds of coefficients: 1) diagnostic (determining the complex estimation) – decisive about the market position, 2) hierarchical – denominative the influence parameters on the final result. On the ground of these coefficients can be guided observation of the activity of all distribution firms (monthly), what lets on the quick diagnostics of the occurrence in the case of the worsening of results.

Nowodays is necessity to use the additional coeficient one necessary to the general estimation of effects of the management in the distribution of the electrical

energy. Namely energy – firms in their own activity must take into account parameters of the service of the customer. In the moment of changes in the system of the distribution of the electrical energy the consequential necessity from the assurance to customers of high standards of the service have the essential meaning. How shows the literature of the object many factors describing on the satisfaction of the customer of the electrical energy. The analysis of author given the following *Composite coefficient of the service of the customer*, it consist from 5 units:

- the coefficient of the realization of the order, the rank (the influence) in Composite coefficient – 30%;
- the level of the reliability of deliveries – 25%;
- the accessibility of the information on of deliveries – 15%;
- the exactitude of bills – 15%;
- the investigation of the complaint – 15%.

The power of the influence of most important parameters on the final result (the value of the diagnostic coefficient) and effects of the management with the distribution of the electrical energy are: – it is represented across values of hierarchical coefficients.

The greatest influence on effects of the management with the distribution of the electrical energy in energy-regions have the amortization (23%) which reflects the state of the infrastructure of technical, then remaining costs (19%), the next position is the size of losses (18%). The strong influence on effects of the management with the distribution of the electrical energy have both the sales volume as and the service of the customer (12%). Presented methodology and erected on her base the programme the Monitor helps in quick qualifying of effects of the management with the distribution of the electrical energy, what can determine for manageresses the base of correctory and development activities.

Conclusions

The proposed objectivation methodology of input data for benchmarking analysis enables full reflection of differences among distribution companies. The method gives a possibility to convert the data, both technical and economic, into the comparable analytical platform. Further calculations may be done with usage of DEA methodology, Hellwig taxonomy method or basic statistical tool incl. correlation analysis. The benchmarking of distribution companies conducted in such a way may constitute a basis for taking decisions related to both current and future activities of distribution companies.

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BENCHMARKING JAKO GŁÓWNE NARZĘDZIE ZARZĄDZANIA PROCESAMI DOSTAWY ENERGII ELEKTRYCZNEJ W PRZEDSIĘBIORSTWACH DYSTRYBUCYJNYCH

Streszczenie: Artykuł prezentuje metodologię benchmarkingu stanowiącą nieodzowne narzędzie zarządzania dla sektora dystrybucji energii elektrycznej. Pozwala ona na lepsze zarządzanie przedsiębiorstwem poprzez analizę różnych scenariuszy wraz z opisem rekomendacji i zaleceń, podnoszących efektywność jego funkcjonowania. Proponowane analizy porównawcze zostały opracowane przy zachowaniu trendu podnoszenia efektywności przy udziale energii elektrycznej. Wszystkie środki przedstawione w artykule stwarzają możliwość obniżenia kosztów dystrybucji i budowania przewagi konkurencyjnej przedsiębiorstwa.

Słowa kluczowe: benchmarking, sieć, dystrybucja energii

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ON CASE STUDY METHOD IN ENTREPRENEURSHIP RESEARCH

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Abstract: The analysis of literature indicates a wide range of the use of case study in management science to describe different areas of organizational realities. Case study is a useful method of solving not only scientific problems in the area of management but also practical problems, which is particularly important for solving problems originating in the economic practice of small companies managed by their owners. The objective of the paper is the presentation of the specificity of case study oriented towards its paradigmatic basis and selected practical aspects in the context of research on entrepreneurship.

Keywords: case study, qualitative research, methodology, paradigm, management, entrepreneurship, research problem

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Introduction

Case study research allows the exploration and understanding of complex issues. It can be considered a robust research method particularly when a holistic, in-depth investigation is required. Case study method enables a researcher to closely examine the data within a specific context (Zainal 2007). The appreciation of case study as a research method derives from the fact that researchers have constantly been becoming more concerned about the limitations of quantitative methods in providing holistic and in-depth explanations of the social and behavioral problems. Case study methods enable researchers to go beyond the quantitative statistical results and understand the behavioral conditions through the actor's perspective. By including both quantitative and qualitative data, case study often enables explanation of both the process and the outcome of a phenomenon through complete observation, reconstruction and analysis of the cases under investigation (Tellis 1997).

The analysis of literature indicates a wide range of the use of case study in management science to describe different areas of organizational realities (Matejun 2012). As A. Karami et al. Emphasize, in some periods case study was used even in 40% of research works (Karami, Rowley, Analoui 2006, p. 49. After: Matejun 2012, p. 351). According to E. Patton and S. Appelbaum (Patton, Appelbaum 2003), one of the biggest advantages of using case study in management science is the ability to obtain results of great practical importance for managers, entrepreneurs or stakeholders.

It should be pinpointed that case study is a useful method of solving not only scientific problems in the area of management but also practical problems (Wójcik 2013), which is particularly important for solving problems originating in the economic practice of small companies managed by their owners.

The objective of the paper is the presentation of the specificity of case study oriented towards its paradigmatic basis and selected practical aspects in the context of research on entrepreneurship.

Specificity of *case study* as qualitative research method

In management science, the solution of the exploratory problem or the explaining one may require the use of qualitative research method. The objective of qualitative research is to understand the exceptionality of the situation, to comprehend the nature of the specific phenomenon, its context and interactions with other components, and not the attempt to predict what may happen in the future (Wójcik 2013). Qualitative research consists of the detailed contextual analysis of the specific number of events or conditions and their relationships (Yin 2009). They are usually in-depth, exploratory, based on experience, interpretive and subjective. They refer to research methods describing and explaining a person's experiences, behavior, interactions and social contexts (Fossey et al. 2002).

In qualitative research, there are often asked the questions: "how?", "why?" and "when?" (Yin 2009), highlighting the links between individual constructs (Orr, Menzies 2012, p. 22-23). In the opinion of J.W. Creswell (Creswell 2013), qualitative research is adequate to situations in which deduction is necessary, when the research includes new, complex phenomena and events which are different in different cases of their participants.

One of the fundamental traditions of qualitative research is case study. It is defined as qualitative research method consisting in studying one or more cases (of organizations, programs, events, relationships, social processes etc.) of high internal complexity and intensive relationships with the environment, with the simultaneous use of many sources of information, taking into account the context in which the specific case occurs (Creswell 1998, p. 61-63).The context of the phenomenon is the focus of attention of R. Yin (Yin 2009, p. 6), who defines case study as the empirical study the object of which is the investigation concerning the specific phenomenon in its real context. The use of case study often takes place in a situation when the boundaries between the phenomenon and its context are not completely clear and in situations when it is possible to use data from many sources.

Case study is also defined as the research strategy. K.M. Eisenhardt (Eisenhardt 1989, p. 534) claims that case study is just the strategy which is focused on understanding the specificity of the specific configuration of factors. M. Strumińska-Kutra and I. Koładkiewicz (Strumińska-Kutra, Koładkiewicz 2012, p. 2-3) suggest the interchangeable use of the terms of "method" and "strategy" with reference to case study. While referring to the studies by R. Yin (Yin 2003,

2009) and N. Denzin and Y. Lincoln (Denzin, Lincoln 2009), it can be observed that the concept of strategy can be interpreted as the way of designing the research process and it is equivalent to the concept of method, used in the broad context after J. Sztumski (Sztumski 2005), understood as a group of directives and rules based on ontological assumptions indicating some ways of the examination procedure.

Paradigmatic basis for case study

Generally speaking, the reference points for case study are two paradigms existing in social science – positivist and phenomenological (constituting the group of phenomenological paradigms among which there may be listed, most of all, critical theory, constructivism and realism). These paradigms are reflected in the case study method whereas its nature is subjected to changes depending on the adopted paradigm. It may take the form between the inductive approach (phenomenological paradigm) and the deductive one (positivism). An important fact is that case study escapes unambiguous classification (Wójcik 2013). As P. Wójcik (Wójcik 2013) underlines, when referring to the work of R. Piekkari, C. Welch and E. Paavilainen (Piekkari, Welch, Paavilainen 2009), 80% of the published research results in management science carried out with the *case study* method have the properties of the positivist paradigm, which was defined as tacit or qualitative positivism. J. Karpacz and B. Nogalski (Karpacz, Nogalski 2012, p. 206) also paid attention to the positivist grounds for case study.

However, the legitimation of *case study* is associated with crossing methodological barriers whereas, in practice, the research is often based on combining approaches and scientific paradigms. For this reason, case study is defined by R. Piekkari, C. Welch and E. Paavilainen (Piekkari, Welch, Paavilainen 2009) as the research strategy which, through the use of different sources of data, analyzes phenomena in their natural context, with the orientation towards the confrontation of theory with the empirical world. This confrontation may take the form of identification of constructs for further testing theory or searching for the holistic explanation how processes and reasons "match each other" in each individual case (Ragin 1992).

The research using mixed methods has developed significantly recently. With significant substantial support of the approach supporters such as: J. Creswell, A. Tashakkori, B. Johnson, A. Onwuegbuzie, J. Greene, C. Teddlie, D. Morgan, mixed methods emerged as a research movement of the variable name and identity (Denscombe 2008). They evolved to the state in which they are increasingly clear, combined with the research practice and, importantly, perceived as the third main research approach or even the third paradigm (Johnson, Onwuegbuzie, Turner 2007).

The background of the research using mixed methods is associated with the fieldwork performed by sociologists and cultural anthropologists in the early twentieth century (Creswell 1999; Johnson, Onwuegbuzie, Turner 2007). Mixed methods have been treated as the third paradigm since the nineties of the 20th

century. This fact is simultaneously associated with equal situating them next to the existing paradigms (Johnson, Onwuegbuzie, Turner 2007). Generally, the philosophical partner of the research approach based on mixed methods is pragmatism. It provides the set of assumptions concerning knowledge and research which constitute the foundation based on mixed methods. Pragmatism also allows for distinguishing this approach from purely quantitative approaches based on the (post) positivist philosophy and purely qualitative ones, based on worldviews such as interpretive paradigm and constructivism (Johnson, Onwuegbuzie 2004; Maxcy 2003; Rallis, Rossman 2003).

Paradigmatic pacifists, such as T. Goles and R. Hirschheim (Goles, Hirschheim 2000), name the theoreticians and researchers promoting the end of paradigmatic wars and argue that there are strengths and weaknesses of both positivist and anti-positivists approaches. They emphasize that the mutually conflicted paradigms currently have reached the state of coexistence. In support of this statement, it is worth referring to the arguments indicated by L.E. Datta (Datta 1994):

- both groups of paradigms have been used for many years,
- there is significant, permanently growing number of researchers who are in favor of the use of multiple paradigms and methods,
- financing institutions support the research conducted in accordance with both groups of paradigms,
- both groups of paradigms have significant impact on science,
- each of both groups of paradigms has contributed greatly to the enrichment of the current state of knowledge.

It is actually the coexistence of paradigms that has contributed to the occurrence of a new view on the research. This perspective, with its source in the achievements of the philosophical school, known as previously mentioned pragmatism, is based on the proposal relating to the fact that researchers should use "any philosophical and/or methodological approach which best refers to the specific research problem currently being the subject to the analysis" (Tashakkori, Teddlie 1998, p. 5). The sources of pragmatism date back to the works from the late 19th century and the early 20th century by scientists and philosophers such as: W. James, C.S. Pierce, J. Dewey and O.W. Holmes, as well as the contemporary philosophers such as R. Rorty and D. Davidson (Menard 1997). Pragmatism reflects the distinctive American approach to philosophy and as such from the beginning it was just oriented towards the statement of "everything works" and refraining from the use of metaphysical concepts such as "truth" and "reality" (Tashakkori, Teddlie 1998). The pragmatic approach is at the same time contrary to the belief by G. Burrell and G. Morgan (Burrell, Morgan 1979) on the impossibility of combining paradigms (*incommesurability*) and the necessity for clear selection of a paradigm, simultaneously implicating the lack of possibility of combining and reconciling it with others.

As J.W. Creswell underlines (Creswell 2013, p. 36-37), pragmatism, as a world view, has been developing on the basis of actions, situations and their consequences, not the adopted assumptions (like post-positivism). Researchers are

not interested in methods but research problems which they attempt to explain using all possible actions. Pragmatism in these conditions is very important in social science due to the pluralist approach to research problems. It opens the gate to the diversity of methods, multiple world views and varied assumptions as well as different ways of collecting and analyzing data. Its role also refers to management science which is extremely prone to the use of diversified approaches, while absorbing methodological pluralism and eclecticism (Sułkowski 2011, p. 30-44).

The pragmatic approach is successfully applied both in foreign and Polish studies in the area of entrepreneurship (compare: Jałocha 2014). When detailing the components of the mixed approach, used in the research in the field of entrepreneurship (Tomski 2016; Lemańska-Majdzik 2014; Sipa 2012), the efficient approach may be based on the use of the research inspired by ethnography (more: Kostera 2013, p. 24-29), in which the main actors are social actors and the investigated phenomena are analyzed through the lens of perception by their participants. In these conditions, the research into entrepreneurship can be placed in the stream of the interpretive and symbolic paradigm.

The sources of inspiration in the area of this paradigm are social and human sciences such as: sociology, psychology, political science and cultural anthropology. The attempt to reconstruct the assumptions of the interpretive and symbolic paradigm in management leads to several points including: social constructivism, cognitive role of a language in creating social reality and involvement of cognitive activity in practice (Sułkowski 2012, p. 116). The scientific research in the interpretive and symbolic stream focuses on understanding phenomena from a broader perspective of actors themselves whereas the description of the research is primarily the interpretation of processes from the point of view of their participants, told by the researcher. The superior objective of the research is describing and understanding, not explaining the reality (Czarniawska-Joerges 1992).

The use of the pragmatic approach allows for using methods compliant with the beliefs of the researcher, and also attempting to cover the content and satisfy the research "curiosity" in the problem analysis. This type of *case study* is also inscribed in the humanistic stream in management science (Kociatkiewicz, Kostera 2013), with its methodology and the research subject – the problems of entrepreneurial management from the perspective of the human being – the entrepreneur.

The practice of case study in entrepreneurship research

It should be underlined that case study in its essence is not linear in its nature, in which the approved tools and protocols of collecting data are not subjected to changes but it is an iterative activity. In such proceedings, there is repeated the stage of developing tools and collecting data due to the obtained information or encountered difficulties (Czakon 2012). The source of data in *case study* can be observations, interviews, company's documents, press articles, surveys, databases conducted by different institutions. Also, there are not methodological constraints

as for the method of data analysis (Wójcik 2013). In accordance with the results of the research conducted by M. Matejuna (Matejun 2012) on a sample of 48 researchers from the Polish scientific centers, using the strategy of case study in the field of management science, there is mostly used the interview method (88% of the research), within the framework of which the applied tools are questionnaires or instructions for interviews. A frequently used method is also the examination of documents (75% of the research). The research based on ethnographic inspirations is mostly based on open interviews (more: Gudkova 2012; Glinka, Gudkova 2014, p. 47). In such circumstances, interlocutors have an opportunity to share stories concerning different aspects of entrepreneurial management.

Some of the interview can be certainly structured in accordance with the positivist belief on the need to order and standardize some of the threads and measure the selected parameters. Also, in the spirit of positivist assumptions, one may search for clues to formulate research hypotheses, aimed at solving the research problem, set in the subsequent quantitative research. The impact of positivism can also be materialized in the content of the research results description by referring to the existing theories and making attempts to make the feelings and events described by entrepreneurs more real as well as discussions and references to the existing theories. In relation to this fact, it is worth referring to the statement by M. Strumińska-Kutra and I. Koładkiewicz (Strumińska-Kutra, Koładkiewicz 2012, p. 1) that the representatives of post-positivism based on *case study* attempt to create broader generalizations and even modify the existing theories.

Grounds for the selection of cases for the analysis

As J. Seawright and J. Gerring (Seawright, Gerring 2008) emphasize, the selection of cases is even the basis for the activities of the researcher using the *case study* strategy. At the same time, they pay attention to the fact that random selection is not an appropriate solution under conditions where the target number of cases subjected to the analysis is too small. In such conditions, purposive sampling is necessary, which is pinpointed by W. Czakon (Czakon 2011, p. 55) simultaneously stating that case study in most of its usage is conducted just in the mode of purposive sampling.

If the method used is aimed at deepening understanding and not prediction, the selection of participants of the research is focused on individuals that become catalyzers of the dialogue concerning their life experiences (Jemielniak, Kociatkiewicz 2009). However, adequately, in the opinion of J. Gerring (Gerring 2006), the final selection of appropriate cases is a particular challenge when their number is to be very limited. In the selection of cases, undoubtedly, an important fact is that, in most studies, *case study* is oriented towards explaining the properties of a greater population. The cases selected for the analysis are therefore something more than the specific case itself, even if generalizations are formulated in a non-binding manner (Gerring 2004). The selected cases are therefore to perform just a heroic function – the representation of the whole population of cases, which is usually much larger than a single analyzed case itself. A truly representative case

is not therefore easy to recognize in any way. An additional challenge for the researcher is also to achieve the diversity of cases in the area of significant dimensions (Seawright, Gerring 2008).

According to the classification by B. Flyvbjerg (Flyvbjerg 2006), the cases maximally diversified, aimed at obtaining information concerning the significance of different conditions for the specific process or phenomenon and its result, are adequate to the problem of entrepreneurship. The criterion of diversity is also pinpointed by W. Czakon (Czakon 2011, p. 55), who claims that it requires the study of many cases selected in a way allowing for presenting at least different circumstances or contradictory cases. Those different circumstances in the case of entrepreneurship research are e.g. different stages of the entrepreneurship cycle. According to the classification by R. Yin (Yin 2003), it is worth selecting cases enabling the implementation of the exploratory case study which, as a result of the research conduct, allows for the formulation of general questions and hypotheses for the future research or the assessment of the feasibility of the research procedures planned in the future studies.

In other considerations on the methodological grounds for the selection of cases for the analysis, J. Seawright and J. Gerring (Seawright, Gerring 2008) indicate the existence of their seven types. Adequately to the classification suggested by them, the cases selected for the analysis of problems of entrepreneurship are the ones inscribed in the group of typical, diversified cases. A typical case is the one being the representative of a kind, reflecting best its specificity. The study based on this type of cases focuses on the exemplification of a stable relationship occurring in a greater number of cases. Finding a typical case of the occurrence of a phenomenon allows for fulfilling the basic condition required in the process of the selection of cases. Due to its structure, a typical case can be perceived as a representative case (Hersen, Barlow 1976, p. 24). The strategy for the selection of cases by J. Seawright and J. Gerring (Seawright, Gerring 2008) focuses on the achievement of maximum diversity of significant dimensions. This method is known as the diversified case method. This approach refers to the concept of maximum variation (heterogeneity) sampling by M.Q. Patton (Patton 2002, p. 234). It requires the selection of at least two cases for the analysis the target role of which is to present the full range of values or their relationships. When the researcher focuses on values, the analysis is exploratory in nature, oriented towards searching for hypotheses whereas when they are concentrated on the relationships between variables the analysis is confirmative in nature (testing hypotheses) (Seawright, Gerring 2008). The variable, which can be found significant for the selection of cases is the stage of the cycle of entrepreneurship. Apart from the stage of the cycle of entrepreneurship, it can also be the stage of the enterprise development cycle. This stage can be determined e.g. on the basis of the tool developed by J. Machaczka (Machaczka 1998, p. 136-139).

The presentation of the research should be materialized in the form of the descriptive report. The core of the discussion on individual cases should be indicated by the formulated research question or research questions.

Conclusions

Case study is the research strategy perfectly inscribed in the specificity of management science. Its multi-dimensional and multi-threaded nature corresponds with the multi-paradigmatic nature and methodological pluralism of the science. These facts are certainly in favor of a strong position of case study as a way leading to the exploration of the complex organizational reality, including the issues in the field of entrepreneurship.

As a final, concluding remark it is worth stating that *case study* is definitely a scientific research method but it also can be seen as a craft, which requires practice supported by theoretical findings and directions. As H.R. Bernard stated "Research is a craft. I'm not talking *analogy* here. Research isn't *like* a craft. It *is* a craft. If you know what people have to go through to become skilled carpenters or makers of clothes, you have some idea of what it takes to learn the skills for doing research. It takes practice, practice, and more practice" (Bernard 2017, p. 1).

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O METODZIE *CASE STUDY* W BADANIACH Z ZAKRESU PRZEDSIĘBIORCZOŚCI

Streszczenie: Analiza literatury wskazuje na szeroki zakres wykorzystania studium przypadku w naukach o zarządzaniu do opisu bardzo różnorodnych obszarów rzeczywistości organizacyjnych. Na podkreślenie zasługuje także fakt, iż studium przypadku jest przydatnym sposobem rozwiązywania nie tylko problemów naukowych w obszarze nauk o zarządzaniu, ale również problemów praktycznych, co ma szczególne znaczenie dla rozwiązania problemów mających źródło w praktyce gospodarczej małych firm zarządzanych przez właścicieli. Celem opracowania jest prezentacja specyfiki case study ukierunkowana na jej podstawy paradygmatyczne oraz wybrane aspekty praktyczne w kontekście badań nad przedsiębiorczością.

Słowa kluczowe: studium przypadku, badania jakościowe, metodologia, paradygmat, zarządzanie, przedsiębiorczość, problem badawczy

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BARRIERS AND STIMULANTS IN THE INVESTMENTS ACTIVITY OF ENTERPRISES

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Abstract: This paper presents the concept and importance of the investment activity of enterprises in the process of their development. The expenditures in this period can ensure maintaining or increasing the market share of the enterprise in the future. However, investment activities are characterised by substantial capital intensity. Therefore, the lack of financing sources can represent a barrier. Especially risky are the investment projects that require larger investment expenditures. In order to avoid failures during investment execution, risk should be professionally managed and threats should be detected in advance and prevented.

Keywords: enterprise investments, finance sources, investment risk

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Introduction

A prerequisite for the economic growth of any country is constant capital accumulation. The accumulation can result from collecting savings, investment activity and continuous improvement of human skills and implementation of the scientific and technological advances. Hence the role of investments in the development process is an important consideration. The intensity of investment activities determines not only the country's economic growth and its modernity but also the level of meeting physical and cultural needs of society. Therefore, the investments represent the major determinant of social development of a country and the enterprise (Lewicki, Czyżewska 2016). They affect the development in both micro and macro scale, thus being strategic decisions.

Making the decisions that involve risks, including investment activities, substantially depends on the opportunities of preventing their negative effects. From this standpoint, identification and systematization of the investment risk factors on the macro and micro scale and identification and verification of the methods to reduce this risk seem to be critical.

The role of investments in the development

The concept of investment stems from Latin *investio*, meaning, among other things, clothing and covering. Over the years, the understanding of investments has shifted to economic processes that allow for generation of durable goods and

solutions used to meet any needs. More and more attention has been paid to financial aspects due to the necessity to ensure sources of financing of this activity.

In the business practice, investments are a complex and individualized process, which has an effect on the development of the enterprise and the increase in its value. Changes in the enterprise's assets induced by investments stimulate other changes that impact on its functioning, mainly on reinforcing its market position.

Specific properties of investments include collecting and spending capitals in the expectation of future return with additional benefits i.e. profits (dividends)[1].

An important component of each investment[2] is time from the investment to its completion. Risk is also inherent in investments aimed at future benefits[3]. It is worth noting that investments are closely related to financing[4], as they involve collecting and acquiring of capital (funds) and effective spending of the capital. Spending resources means changing them into necessary physical components of equity or purchasing securities or financing non-financial investments needed by the enterprise for operation and development.

Therefore, using some simplification, enterprise functioning can be reduced to two interrelated stages in investments (Duliniec 2011, p. 52):

- investing capitals in the enterprise by both owners and creditors, which ensures financing the activities,
- investing the capital in assets necessary for further functioning i.e. the use of the portfolio of the physical and financial investments.

From the standpoint of the role of investments in the development, the most important functions include e.g. creation and modernization of fixed assets in all domains of human activity (Kościelniak, Puto, Brendzel-Skowera 2014). This allows not only for the increased production and service capabilities (physical and non-physical) but it also improves conditions of life and work of a society. Nevertheless, an important function of investments is to equalize the level of the economic growth in various areas and to create conditions for modernization of the economic structure of a specific country. The importance of individual functions of investments for the economic growth is time-variable and depends on specific economic conditions in a specific period. It seems that one of the more important functions of investments is to create conditions for the exchange of the structure in order to modernize and, therefore, to improve its competitiveness not only in the national market but also in the foreign markets.

[1] Details of investment processes were analysed by A. Zachorowska in the study: *Ryzyko działalności inwestycyjnej przedsiębiorstw* (Zachorowska 2006, p. 11 and further).

[2] Investments in general are understood to mean spending a specific level of finance in order to ensure a return that would compensate for the time the resources were invested and the risk concerning the potential benefits (Reilly, Brown 2008, p. 5).

[3] The literature emphasizes three characteristics each investment needs to have: it should increase the value; produce benefits in the future; involve risk (see e.g. Jajuga, Jajuga 2008, p. 9).

[4] Financing is connected with two inseparable and interrelated stages that, on the one hand, involve the determination of the directions of investments and, on the other hand, indicate the sources used to cover costs of property acquisition (Kokot-Stępień 2012, p. 196).

The investment activities occur mainly in the domains which have the biggest opportunities for the development, contributing to the modernization of the economy of the whole country (Turek 2006). This has a significant effect on the development of competitiveness of enterprises and, consequently, creation of the conditions for cooperation with foreign companies.

In reference to the enterprises, the investment policy[5] is a part of not only the survival strategy but, first and foremost, development strategies. This concerns in particular physical investments since they allow for the increase in production capabilities of the enterprise and the increase in competitiveness of its products. Consequently, this impacts positively on the economic growth of a country.

Therefore, physical investments are a precondition for the development of any enterprise. The expenditures in this period can ensure maintaining or increasing the market share of the enterprise in the future. This process results from the incessant scientific, technological and economic advances, which represent both a driver of the development in both individual enterprises and the whole economy.

Sources of financing the investment activities in enterprises

The characteristic feature of investment activities is relatively substantial capital intensity. Therefore, equity is usually insufficient. This leads to the necessity of supplementing equity with various forms of the outside capitals. The definition of the sources of investment financing should be preceded by the choice of an optimal financing structure (Łukomska-Szarek 2011). Optimization of the choice of sources of investment financing is performed based on the economic account. Based on detailed analyses, one can choose the most effective structure of financing of the investment processes. The methods of financing the investment projects depend on various factors. Among them, the most frequent include credibility (e.g. financial credibility), prospects for growth in a specific sector, availability of individual sources of financial feed, negotiating skills of entrepreneurs and the fiscal system. The costs of capital, financial risk and the structure of previous financing are also considered important (Ostaszewski 2000, p. 50-53; Łukomska-Szarek 2016).

An important problem is availability of individual forms of financing (Worzała 2015). Contrary to small business units, which are usually forced to make choices which are not always optimal to them, the respected and large enterprises have substantial opportunities for the choice of the form of financing. Financing of the investment projects by small business entities occurs mainly through owner's payments, loans or leasing. These forms are considered as the most universal. Apart from the above mentioned forms, bigger economic entities can also use more varied sources of financing.

[5] The investment policy in the enterprise represents a set of any current and long-term activities that are aimed at indication of the investment needs of the business entity and those aimed to satisfy the needs. The investment policies are used to derive an investment strategy that consists in determination of the reasons and aims of investing and, eventually, making the investment decision. More details on this problem are discussed by A. Zachorowska and P. Kokot-Stępień in a study *Inwestycje w strategii rozwoju przedsiębiorstwa* (Zachorowska, Kokot-Stępień 2008, p. 24-31).

In the case of financing the investments, uniform financing is a rare occurrence and mixed financing is used instead, with part of capital being equity, while the other part representing the foreign capital. There are no normative values of foreign capital share, whereas the main criterion for the development of the capital structure is maximization of the benefits. The change in the capital structure of the enterprise involves changing the incomes generated by the enterprise. On the one hand, there is a new liability which reduces the level of profits. On the other hand, the owners and decision-makers expect the increase in profit rates and the improvement in financial situation. In the literature, capital structure has been defined equivocally (see e.g.: Zachorowska 2006; Janasz 2010). It can be defined as a target combination of debt and equity maintained by a specific enterprise to finance e.g. investment activities (more details were given by e.g. Brigham, Daves 2007, p. 508; Baker, Martin 2011, p. 2 and further). At the same time, most authors define this structure as a financial structure. Furthermore, they approach the capital structure as a combination of long-term debt and equity maintained by the enterprise. Determination of the capital structure depends on the stage in the enterprise growth. A substantial demand for capital is observed in the growth phase, with its principal source being foreign capitals.

One of the most important problems during the investment execution is to develop the structure of capital that supports the investment process, as the capital structure impacts on the level of the investment risk. It should be emphasized that there is a theoretically justified "model" proportion between the equity and foreign capital. This is also supported by the results of practical examinations. The structure of capital is affected by a number of factors, with the most basic being risk profile. Each investor has different risk profile. Furthermore, it is also time-dependent. The activity of each investor is accompanied by a number of risk types with a universal character. Among many types of investment risk (see also abot risk Wójcik-Mazur 2012, p. 36-37; Wójcik-Mazur, Szajt 2015), the most important and basic are financial risk and enterprise risk (see: Zachorowska 2005; Kościelniak et al. 2016).

Investment risk management

Current enterprises operate in a dynamically changing environment. With contemporary investment development and the necessity of the implementation of the scientific and technological progress, they are unable to recognize all aspects of risk. With greater capital involved in the investments, the evaluation of the future enterprise growth becomes more important and forces entrepreneurs to implement risk policies with full awareness, especially because the investment projects that require larger investment expenditures are particularly riskye (more about project management Skowron-Grabowska 2012; Brzozowska, Szymczyk 2017, p. 377-387). The investment needs of the enterprises and readiness to invest are closely correlated with their strategic orientation and changes in the environment. The investment strategies mean starting and execution of investment projects aimed not only to increase investment effectiveness but also on the increase in the

market value of the enterprise. This leads to the conclusion that investment activities of enterprises are closely related to the adopted strategy of development and taking into consideration the changes of the economic, political and social nature, also with ecological conditions. Furthermore, if the country is the European Union member state, investment decisions result not only from the adopted strategy of the development but also from the settlements and solutions used in the EU, concerning, among other things, the natural environment (more details on this problem are discussed by Kościelniak 2016, p. 63-73).

In order to avoid failures during investment execution, risk should be professionally managed and threats should be detected in advance and prevented. Effective risk management depends on the concept of the project, immediate working environment, previous status of studies on the project and identity and activity of other project participants. It should be also emphasized that the effective risk management allows not only for verification of the adopted project solutions but also on the improvements in the project itself, thus ensuring the achievement of the goals, which has been emphasized by many authors (see e.g. Czekaj, Dresler 2006, p. 110 and further).

Risk management is a term which has been commonly used in the investment practice. In the economic practice and, consequently, the investment activity, risk management means in general identification of events that can represent a threat to the financial result of this activity and planning the protective actions to limit the negative effect of the risks (more broadly on the main areas of risk for Poland in the opinion of foreign investors by Limański, Drabek 2017, p. 239). However, the investors use mainly micromanagement with respect to individual risk exposures whereas because of high costs, they use global management in this area (see: Hommel, Pritsch 2002, p. 1-21).

A central decision-making problem in risk management is the assessment and choice of alternative methods, strategies, projects and means of risk reduction. The risk should be identified, analysed and controlled regularly while the methods and instruments of its reduction should be corrected adequately to the variable conditions of the environment. This means the *ex ante* process, which consists in recognition and preventing the negative effect of the risk or using the factors which have a positive effect on the investment process[6]. At the same time, it is also oriented towards the absorption of the effects of negative deviations from the desired state, being the *ex post* activity. The idea of both risk management variants (*ex ante and ex post*) is to minimize the negative effect of the risk.

There are studies in the literature that use either narrow or broad approaches to this process. With broad understanding, risk management involves all types of activities aimed at elimination or limitation of each risk that is actually present or can potentially occur in the future. With the narrow approach, this means the actions taken to prevent or limit the potential negative effects of a specific risk (Zachorowska 2006).

[6] A broader analysis of the investment risk, including risk management, was presented by K. Marcinek in a study *Ryzyko projektów inwestycyjnych* (Marcinek 2000). See also D. Dziawgo, *Zarządzanie ryzykiem w banku komercyjnym* (Dziawgo 1999, p. 354).

Conclusions

Making investment decisions has an effect on the capital structure. Consequently, the previous relation between equity and foreign capital is not adequate for evaluation of its costs. Therefore it is critical to take into consideration the effect of a new investment on both the capital which was present in the enterprises before the potentially new capital. The planned capital structure should reflect the optimal structure in the enterprise. The development of the capital structure, especially the structure of investment financing sources, is one of the most difficult tasks in the decision processes of the enterprise. In this respect, the decisions impact not only on the risk level in the investment projects but also on the financial standing of the investors, in both short and long period of time.

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BARIERY I STYMULATORY DZIAŁALNOŚCI INWESTYCYJNEJ PRZEDSIĘBIORSTW

Streszczenie: W artykule przedstawiono istotę i znaczenie działalności inwestycyjnej przedsiębiorstw w procesie ich rozwoju. Poniesione w obecnym okresie nakłady pozwolą w przyszłości na utrzymanie bądź zwiększenie udziału przedsiębiorstwa na rynku. Jednakże działalność inwestycyjna cechuje się znaczną kapitałochłonnością, dlatego też brak źródeł finansowania może stanowić barierę jej rozwoju. Za szczególnie ryzykowne należy uznać te przedsięwzięcia inwestycyjne, które wymagają dużych nakładów inwestycyjnych. Chcąc uniknąć niepowodzeń, w czasie realizacji inwestycji powinno się profesjonalnie zarządzać ryzykiem, rozpoznawać wcześnie niebezpieczeństwa i zapobiegać im.

Słowa kluczowe: inwestycje przedsiębiorstw, źródła finansowania, ryzyko inwestycyjne

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RISK OF INVESTMENT PROCESSES IN ENTERPRISES

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Abstract: Risk is quite inherent in the market economy and it has a different impact on each business activity, including investment activities. Taking investment activities with substantial risk largely depends on the opportunities of preventing its adverse effects. Risk cannot be entirely eliminated but it is possible to limit its level. In this context, adequate risk management seems to be critical.

Keywords: investments, investment risk, investment risk management

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Introduction

A prerequisite for the economic growth of any country is constant capital accumulation. The accumulation can result from collecting savings, investment activity and continuous improvement of human skills and implementation of the scientific and technological advances. Hence the role of investments in the development process is an important consideration (more about financing of development activities by Łukomska-Szarek 2011). However, capital absorption of the Polish economy is low while major barriers to investment activities include not only insufficient level of own capital but also the substantial risk involved in investments.

The willingness of the enterprises to engage in investment activities largely depends on the opportunities to utilize instruments that reduce the level of this risk.

The idea of investment activities in enterprises

The investment-based development of the enterprise is necessary for reinforcing and maintaining its market position whereas investment projects are considered the most important pillar of this development. Investments are needed for the business entity to maintain or reinforce its potential. With investments, the enterprise does not only acquire new or modernized fixed assets but it also increases the value of current, intangible and legal assets. Investments naturally change the structure of enterprise assets and structure of financing sources, thus impacting new internal and external relations.

Although there are many various definitions of the investment concept, the investment is mainly defined as spending funds (on physical, financial, intangible

and legal assets) in order to generate higher profits in the future (Zachorowska, Łukomska-Szarek 2011).

In the business practice, investments are a complex and individualized process, which has an effect on the development of the enterprise and the increase in its value. Changes in the enterprise's assets induced by investments stimulate other changes that impact on its functioning, mainly on reinforcing its market position. Specific properties of investments include collecting and spending capitals in the expectation of future return with additional benefits i.e. profits (dividends).

In reference to the enterprises, the investment policy[1] is a part of not only the survival strategy but, first and foremost, development strategies. This concerns in particular physical investments since they allow for the increase in production capabilities of the enterprise and the increase in competitiveness of its products. Consequently, this impacts positively on the economic growth of a country.

Therefore, physical investments are a precondition for the development of any enterprise. The expenditures in this period can ensure maintaining or increasing the market share of the enterprise in the future. This process results from the incessant scientific, technological and economic advances, which represent a driver of the development in both individual enterprises and the whole economy.

Risk and uncertainty in investment processes in enterprises

The basis for any investment decision is prognosis of future operating conditions, which is to a certain degree exposed to uncertainty, which also relates to individual factors of current decisions concerning the investments (Goldie, Murray 2011, p. 28). In the process of making investment decisions and the related financial decisions, enterprises incur a specific risk that the decision can be wrong and would not produce the expected business benefits.

Despite the lack of accurate and comprehensive information concerning future conditions of management, the business entity has to make the decision which consequently involves some errors. With this approach, the term risk can have a negative (the risk can lead to loss) and a positive aspect (if the effects are higher than expected) (Wójcik-Mazur 2012, p. 36-37; Wójcik-Mazur, Szajt 2015).

There is no a clear-cut and coherent definition of the investment risk as part of business risk in the economic literature. In general, the risk is linked to uncertainty of reaching the expected investment effects (the goals set in the decision-making process) (see: Bodie, Taqqu 2012, p. 50; Cooper et al. 2005, p. 3; Zachorowska 2006, p. 64; Skowron-Grabowska 2011; Łukomska-Szarek 2016). This is connected with the likelihood of return on investments which is different than expected while it concerns not only the opportunities to obtain worse but also

[1]The investment policy in the enterprise represents a set of any current and long-term activities that are aimed at indication of the investment needs of the business entity and those aimed to satisfy the needs. The investment policies are used to derive an investment strategy that consists in determination of the reasons and aims of investing and, eventually, making the investment decision. More details on this problem were discussed by A. Zachorowska and P. Kokot-Stępień in a study: *Inwestycje w strategii rozwoju przedsiębiorstwa* (Zachorowska, Kokot-Stępień 2008, p. 24-31).

better outcomes. Therefore this concept describes the uncertain phenomenon concerning the future, which will have a negative effect on business activity or will lead to positive effects of the investment project (Okręglicka 2017).

The risk of the investment projects has been also defined as a quantifiable likelihood of the situation in which actual expenditure on the project and real effects of investment activities would negatively deviate from the primary evaluation. The scale of deviations between the actual and expected values reflects the level of risk, which increases with the rise in the likelihood of the unfavourable phenomena or the scale of loss caused by this phenomenon (Marcinek et al. 2010, p. 16).

Therefore the risk of investment projects is an equivocal concept, which involves many elements (Zachorowska 2013, p. 7-19). The related literature emphasizes three major components: event (unwanted change), likelihood of the event and the effect of the event (level of threat) (Kerzner 2009, p. 747).

The complexity of the investment risk results from many stages of the investment process. It should be emphasized that at individual stages of the investment projects, sources of risk and consequently its categories and risk management are changed, as is the scale of risk (Tworek et al. 2013; Suchecka, Nieszporska 2015). The likelihood of making a mistake relates both to the decision process and the implementation of a project. All the decisions made later during the investment process depend on the initial investment decision and its accuracy is critical to the future success of the investment.

All the investment decisions can be made under conditions of certainty or uncertainty. Due to the specific nature of the decision process, human behaviour is very important in risk conditions. The literature on risk emphasizes the three basic attitudes of investors towards risk: aversion, neutrality and propensity[2]. A substantial role in the determination of the investment risk is played by subjective sensations of the investor, which means that the choice of the concrete variant of the investment depends on his or her risk propensity.

The risk of investment projects can be considered from the standpoint of the three methodological approaches (Czekaj, Dresler 2006, p. 108):

1) The risk of investment projects can be approached separately, without consideration for the correlations with other parts of the enterprise.
2) This risk can be analysed in the context of the risk of the already owned resources and the effect of the analysed project on the risk of the entire enterprise.
3) The risk of the investment project can be analysed from the standpoint of the risk market and opportunities to create various packages of investments by the investors.

Differences between these approaches are critical to the practice because from the standpoint of the risk incurred by the entire enterprise or the market risk, highly

[2] From the scientific standpoint, additional intermediate forms of behaviours can be highlighted apart from the three basic attitudes towards risk (see: Misztal 2010, p. 14 and further; Seog 2010, p. 18 and further).

risky projects that are analysed separately can become the projects with low risk. The benefits that result from diversification of assets of the economic entity can substantially limit the risk of the investment project.

The character of the investment risk is varied. It can be single-directional (loss) or multi-directional (profit, loss).

Making right investment decision requires the assessment of the risk level. Risk identification and assessment depend on the conditions in which the decisions are mad. The risk of investment activities is affected by various factors, both of internal and external character. Depending on the specific nature of the investment project, the risk is more or less affected by other market, political, technical and random factors.

Stages in the investment risk management

In the literature, the explorations concerning the specific risk are linked directly to risk management (Kościelniak et al. 2016)[3], which represents the core element of the strategic management in any enterprise. In the case of the investment projects, risk management is a separate process, which can be arbitrarily divided into phases and stages when various activities are performed and adequate methods, tools and techniques are used to identify, analyse and respond to the project risk.

Risk management should have a planned and purposive character. This means that such activities should be regular and sustained, and their goal is to maximally limit the risk and prevent from its negative effects. This process is mostly divided into three stages (Marcinek et al. 2010; Murphy 2008):

- risk identification and quantification,
- risk control,
- risk monitoring in order to maximally limit the risk.

Risk management is a continuous process, concerning all the phases of the process. It can be concluded that regardless of concrete solutions, the above listed stages constitute the standard model of risk management.

The first stage is mainly informative and prognostic. It concerns in particular risk identification, definition of its specific character and type. Risk identification involves all the areas of threats. Adequate risk identification and risk assessment largely depends on the scope, completeness and quality of information. Risk identification helps choose adequate measurement methods i.e. risk quantification. Identification of the sources of risk of the investment[4] can be followed by the assessment of individual types of risk. It is also important to evaluate the effect of individual types of risk on the investment. Risk quantification is one of the difficult

[3] Risk management means identification of potential events or situations, evaluation of their effects and likelihood of occurrence, definition and using adequate methods to respond to these events and risk monitoring (Korombel 2013, p. 43).

[4] Risk identification consists in determination of the types of risk which are most likely to affect the investment. At this stage, the characteristics of each type of risk are also determined (*A Guide to the Project …*, 2004, p. 111 and further).

stages in risk management. A variety of techniques can be used and their choice depends on many factors, both objective and subjective. The objective factors include the type and size of the investment, scope and credibility of collected information, time consumption (Zoła 2014, p. 153) and level of costs of the analysis and risk assessment, and experience and knowledge of the analysts. The subjective factors include economic potential and financial standing of investors.

Risk quantification has a substantial effect on the risk management process. After risk is quantified, the directions of further actions can be defined and the second stage can be started i.e. risk control. At this stage, the decisions to limit risk are made, characterized by active or passive strategies used to prevent the risk.

From the standpoint of risk uncertainty, it is essential that a risk management plan is developed by the person who manages the investment project during the last phase of the pre-investment stage i.e. during development of the detailed technical concept of the project. On the one hand, such a plan would indicate the strategy that should be adopted in the phase of concluding the contracts (with suppliers, subcontractors at the stage of investment realization). On the other hand, the plan would make it easier to choose the most favourable types of contracts. The plan should help make the decisions concerning the correlations between the detailed technical design and implementation of the project in the future from the standpoint of the division of responsibilities and allocation of risk among individual participants of the investment cycle. Adequate assessment of the scale and sources of risk allows for the determination of the resources for limitation of threats and limitation of the possible loss.

Monitoring of the effectiveness of the methods and forms to reduce risk is the last stage in the risk management process. The monitoring involves many areas that focus on the assessment of the effectiveness and efficiency of the methods and instruments used to reduce risk. In general, risk monitoring can be divided into physical and financial (Tarczyński, Mojsiewicz 2009, p. 37 and further). Physical risk monitoring encompasses all the activities and instruments that lead to total elimination of the likelihood of a loss (i.e. risk avoiding or loss prevention) or a substantial limitation of the loss (using the measures that determine the frequency and size of losses). The financial risk monitoring focuses on all the activities and instruments that lead either to stopping the risk (independent risk management by the entity) or risk transfer. Therefore, the monitoring system allows for the assessment of the effectiveness of activities that reduce the risk. It should be noted that there is not universal procedure for risk management in any conditions and with respect to any investor. Such procedures should be designed individually by adjusting them to the internal and external determinants of the concrete investment activities.

As an organized process, risk management provides the foundation for collecting data concerning the types of investment risk, their effects and efficiency of various tools used to control risk. The controlling used in the investment activities extends the information system thus allowing for creation of databases which, if used

properly, can impact on the quality of the decision-making processes[5]. Overcoming the informational barrier helps evaluate the likelihood of specific events in the future, which can in turn have an effect on reduction in the risk level.

Conclusions

The investment decisions should take into consideration all the risk elements and possible methods to monitor the risk. The financial reserves used to prevent the investment risk can significantly impact on the profitability of the designed investment and, consequently, have an effect on the decisions on the implementation of the investment. The investment project should be designed according to the investment strategy adopted by the investor and it should also identify the possible strategies to control the risk.

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[5] All further choices made during the investment process are determined by the investment decision made at the beginning. The future success of investment depends on its accuracy. Therefore the phaze of investment decision making is so essential – it is the critical point for the whole investment undertaking (Zachorowska 2006, p. 64). In theory of decision making, risk is defined as such decision situation, where the uncertainty about future events exists, but the decision-maker has subjective information at his disposal, which are related to possibility distribution of future situation shaping.

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RYZYKO PROCESÓW INWESTYCYJNYCH PRZEDSIĘBIORSTW

Streszczenie: W warunkach gospodarki rynkowej ryzyko jest zjawiskiem powszechnym, w różnym stopniu dotyczącym każdej działalności gospodarczej, w tym działalności inwestycyjnej. Podejmowanie działalności inwestycyjnej obciążonej znacznym ryzykiem zależy w dużym stopniu od możliwości zabezpieczenia się przed jego negatywnymi skutkami. Ryzyka nie można wyeliminować całkowicie, możliwe jest jednak ograniczenie jego rozmiarów. W tym kontekście ważne jest odpowiednie zarządzanie tym procesem.

Słowa kluczowe: inwestycje, ryzyko inwestycyjne, zarządzanie ryzykiem inwestycyjnym