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VARIED METHODS OF PROTECTION OF TRAVELLERS UNDER EUROPEAN LAW

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ABSTRACT

A harmonisation of legal regulations with respect to traveller (passenger) protection in the context of travel and carriage services has taken place recently in the European Union. This is the consequence of the entry into force of Directive (EU) 2015/2302 of the European Parliament and of the Council of 25 November 2015 on package travel and linked package arrangements, which also classifies the service of the carriage of passengers as a travel service. In the case of both type of services, the European Union legislator aimed to provide travellers with a high, reasonably uniform, level of protection. However, he used to this end different legal instruments and protection methods. This paper attempts to compare the instruments and methods of traveller protection applied by the European Union legislator in EU law through showing their advantages and disadvantages.

Introduction

The entry into force of Directive (EU) 2015/2302 of the European Parliament and of the Council of 25 November 2015 on package travel and linked travel arrangements, amending Regulation (EC) No. 2006/2004 and Directive 2011/83/EU of the European Parliament and of the Council and repealing Council Directive 90/314/EEC (OJ UE 2015 L 326/1) resulted in the concept of a traveller, which had been applied so far to the regulation within the scope

of the carriage of persons, being related to persons using the services of tour operators, inclusive of travel agents. This is an example of the approximation of legal regulations to some extent with respect to transport services and travel services. The Package Travel Directive expressly states that carriage of passengers is a travel service (article 3(1)(a) of directive 2015/2302). Furthermore, this new regulation contains references to European Union regulations which govern contracts for the carriage of passengers in particular modes of transport[1].

The aim of the new directive is to adjust the level of traveller protection to a changing market of travel services. It is emphasized in legal writing that the regulations contained in the new Package Travel Directive should foster transparency and legal certainty. This is because not only does package travel consist of particular services created earlier and offered to travellers in the form of a package, but also packages created or customized to meet individual clients' needs (the so called dynamic package), often bought on-line, have become encompassed by legal framework (Gospodarek, 2014, p. 166). At the same time, European Union legislator – as results from Article 1 of the directive - wanted to achieve a high and uniform as much as possible level of consumer protection. Noticeably, it is not only consumers who use travel or carriage services (Karsten, 2007, pp. 126–131).

Regulations of particular modes of transport have a similar objective. Carriage of passengers, similarly to travel services, have been on the European Union legislator's agenda for a long time as part of common EU transport and consumer policy. Also in this case the European Union legislator saw the need to unify the provisions and strengthen the protection of passengers as the weaker party to contracts of carriage, considering the present regulations included in international conventions[2] and internal regulations of the particular member States to be insufficient (Ambrożuk, 2014, pp. 11–24).

The aim of this paper is to compare methods of protection of travellers applied by the European Union legislator in EU law and to show their advantages and disadvantages. Due to the length of this paper, the comments

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[1] That is, the following regulations: Regulation (EC) No. 261/2004 of the European Parliament and of the Council of 11 February 2004 establishing common rules on compensation and assistance to passengers in the event of denied boarding and of cancellation or long delay of flights, and repealing Regulation (EEC) No. 295/91 (OJ UE 2004 L 46/1); Regulation (EC) No. 1107/2006 of the European Parliament and of the Council of 5 July 2006 concerning the rights of disabled persons and persons with reduced mobility when travelling by air (OJ UE 2006 L 204/1); Regulation (EC) No. 1371/2007 of the European Parliament and of the Council of 23 October 2007 on rail passengers' rights and obligations (OJ UE 2007 L 315/14); Regulation (EC) No. 392/2009 of the European Parliament and of the Council of 23 April 2009 on the liability of carriers of passengers by sea in the event of accidents (OJ UE 2009 L 131/24); Regulation (EC) No. 1177/2010 of the European Parliament and of the Council of 24 November 2009 concerning the rights of passengers when travelling by sea and inland waterway and amending Regulation (EC) No 2006/2004 (OJ UE 2010 L 334/1); Regulation (EC) No. 181/2011 of the European Parliament and of the Council of 16 February 2011 concerning the rights of passengers in bus and coach transport and amending Regulation (EC) No. 2006/2004 (OJ UE 2011 L 55/1).

[2] These are the following conventions ratified by Poland: Convention concerning International Carriage by Rail (COTIF) of 9 May (Dz.U. of 1985 No. 34, item 158), as amended by the Vilnius Protocol of 3 June 1999 (Dz.U. of 2007 No. 100, item 674), Appendix A. Uniform Rules concerning the Contract of International Carriage of Passengers by Rail (CIV); two air flight conventions: the so called Warsaw Convention, that is the Convention for the Unification of Certain Rules Relating to International Carriage by Air of 12.10.1929 r. (Dz.U. of 1933 No. 8, item 49), amended by the Hague Protocol of 28.9.1955 (Dz.U. of 1963 No. 33, item 189), supplemented by the Convention for the Unification of Certain Rules Relating to International Carriage by Air Performed by an Entity other than the Carrier under the Contract of 18.9.1961 (Dz.U. of 1965 No. 25, item 167) and the so called. Montreal Convention that is the Convention for the Unification of Certain Rules for International Carriage by Air of 28.5.1999 (Dz.U. of 2007 No. 37, item 235); the Athens Convention relating to the Carriage of Passengers and their Luggage by Sea of 13.12.1974 (Dz.U. of 1987 No. 18, item 108) as amended by the Protocol to the Athens Convention of 19.11.1976 (Dz.U. of 1994 No. 99, item 479). Poland has not ratified the Protocol of 2002 to the Athens Convention which came into force on 23.4.2014. The EU acceded to this Protocol by virtue of two decisions of the Council of 12.12.2011 (OJ UE L8/1 as amended and OJ UE L 8/13 as amended). Pursuant to Article 216(2) of the Treaty on the Functioning of the European Union (consolidated version – OJ EU 2012 C326/1) Poland is obliged to apply the Protocol of 2002 with respect to EU carriage.

will pertain uniquely to civil law regulations connected with contracts made between travellers and carriers and tour operators. Traveller protection, in particular in the context of travel services, also has other aspects, inclusive of those connected with public law, which are beyond the scope of this paper.

The differences of methods applied

In the case of transport services, the European Union legislator used the most far-reaching instrument of unification a regulation, which due to its direct application does not require implementation by the EU Member States. The European Union legislator maintained, however, the separate-in-nature character of regulation of the particular modes of transport and issued a number of regulations[3]. These regulations do not include, however, a comprehensive regulation of contracts for the carriage of passengers in particular modes of transport. The regulatory framework of international conventions regulating particular modes of international transport became the starting point for the European Union legislator. Thus the scope of their application has been extended also to domestic carriage within the territory of the EU. Noticeably, transport conventions in force contain, as a rule, mandatory provisions, which result from their wording (e.g. Article 49 of the Montreal Convention; Article 32 of the Warsaw Convention, Article 18 of Athens Convention. However in the case of CIV, its provisions are mainly semi-imperative, which results from Article 5 of this Convention). The regulations contain, however, provisions referring only to selected problems and generally of a semi-imperative nature. They refer both to issues regulated by international conventions, as well as issues which are beyond of the scope of these Conventions.

A regulative measure applied in the form of a regulation guarantees far-reaching unification of the situation of travellers in the UE. However, a lack of a comprehensive regulation of contracts of carriage for particular modes of transport causes a number of problems. The systems of traveller protection with a complex structure as created consists of EU legislation, international conventions and domestic law. EU regulations, similarly to international conventions, do not regulate all possible aspects, leaving a lot of issues to domestic law. Thus, a phenomenon which is described in legal writing as multicentricity of regulations occurs, with all its consequences (Wesołowski, 2016, pp. 201–215). These are reflected, among others, in uncertainty as to the applicable provisions and remedies available to passengers. Examples of such uncertainty can be found in case law of the Court of Justice of the European Union (e.g. the judgement of 22 November 2012; C-139/11 *Moré,* ECLI:EU:C:2012:741; the judgement of 22 October 2009; C-301/08 *Bogiatzi,* ECLI:EU:C:2009:649) or of national courts (e.g. a resolution of the Polish Supreme Court of 7 February 2014; III CZP 113/13, www.sn.pl/sistes/orzecznictwo/orzeczenia2/iii czp 113-13.pdf or a resolution of this Court of 17 March 2017 r., III CZP 111/16, www.sn.pl/sistes/orzecznictwo/orzeczenia3/iii czp 111-16.pdf, accessed on 6.06.2018). They refer, among others, to time-limits for bringing proceedings established based on different bodies of law (European Union, international or domestic) (see also, Ambrożuk, Wesołowski, awaiting publication) or authorities before which proceedings may be brought (see further, Ambrożuk, 2015, pp. 155–169; Ambrożuk, 2017, pp. 48–60).

European Union legislator chose a completely different route with respect to protection of travellers using services of tour operators. In international law there is no model regulation of protection for such travellers to which

[3] Apart from the regulations mentioned above, another important regulation is Regulation (EC) No. 2027/97 of 9.10.1997 on air carrier liability in respect of the carriage of passengers and their baggage by air (OJ UE 1997 L 285/1) as amended by (EC) No. 889/2002 of the European Parliament and of the Council of 11.05.2002 (OJ UE 2002 L 140/2, Polish Special Edition 2004, chapter 7, vol. 6, p. 246).

the European Union legislator could refer. Thus, under tourism law, the role of the European Union legislator was to develop a certain standard of protection for such travellers and to impose it upon the Member States. It refrained, however, from using a more far-reaching measure such as a regulation. It confined itself to adoption of directive no. 2015/2302 on the maximum level of harmonisation (Article 4), (see Marak, 2015, pp. 16–28). Member States, when adopting internal regulations, may not maintain or introduce into their domestic law provisions different from the ones adopted in the directive, inclusive of provisions which are more stringent for a tour operator, as this would lead to differences in the level of traveller protection. Thus, this standard for all Member States should, as a rule, be unified. Its purpose is to increase the transparency and certainty of law for both travellers and entrepreneurs.

The previous Package Travel Directive no. 90/314/EEC provided a minimum level of harmonisation. Thus, Member States could have guaranteed to clients of tour operators, by way of domestic law, a higher degree of protection than the one resulting from the directive (Nesterowicz, 2012, p. 20; Ambrożuk, Wesołowski, 2001, p. 75; Gospodarek, 2001, p. 26).

However, even a directive providing for the highest level of harmonisation may be improperly implemented. An example of this is the provisions of the Act of 24 November 2017 on package travel and linked travel arrangements (Dz.U. of 2017, item 2361), whereby the Polish legislator made no effort to adjust the terminology to concepts used in domestic law. Accordingly in the act, the Polish legislator adopts the term "performance" of the contract for package travel, whereas in the context of contracts, the term "fulfilment" of the obligation (the contract) is used in Polish civil law. Similarly, instead of using the term "failure to perform or improper performance of the contract", which is established in Polish civil law, the legislator applied automatically the term "non-compliance". Many more examples of this could be found. There are also cases where the Polish legislator implemented the provisions in such a way that the actual meaning of the provisions of the directive was changed. This is illustrated by the provisions of Article 50(3)(1&2) of the aforementioned Polish act. Pursuant to these provisions, a traveller is not entitled to damages or compensation for noncompliance of travel services with the contract when the organiser of the tour can prove that the noncompliance is culpable to the traveller (first paragraph) or to a third party, unrelated to the performance of a travel service as covered by the contract for package travel, and the non-compliance could not have been foreseen or avoided (second paragraph). Directive no. 2015/2302, in its Article 14(3) (a&b) does not require, however, that the cause on the part of the traveller or a third party is culpable.

Another example of incorrect implementation is the provision of Article 50(5) of the Polish act by virtue of which a tour operator may invoke with respect to the traveller the same restrictions which result from specific provisions connected with the liability of the provider of the travel service, which is part of package travel. However, the provision of Article 14(4) of directive no. 2015/2302 mentions international conventions and not specific provisions. The term "international conventions" is not the same as the term "specific provisions" as the latter ones may result from internal (domestic) regulations as enacted.

The method of traveller protection

As already mentioned, European Union regulations connected to carriage refer to both, issues regulated by the provisions of international conventions and contain as well, provisions connected with issues which have not been regulated so far on a transnational scale. In the first case, the European Union legislator improved the existing level of protection for travellers using carriage services (e.g. within the scope of limits of the amount of compensation due from the carrier for loss of life, health or luggage). In the second, passengers were granted additional rights,

e.g. the right to an advance payment on compensation in the case of personal damage, rights for passengers who are disabled or with limited mobility, the right to the so called flat-rate compensation for passengers in the event of the cancellation of a run (a flight), delay in carriage, non-admission on board the means of transport and the right to make a complaint (Ambrożuk, 2014, p. 12). Thus, in the context of transport law, the protective function of the provisions of the European Union regulations consists of strengthening passengers' protection in relation to standards resulting from international conventions and granting new rights which were not present so far.

The situation is quite different in the case of travel services, where there are no equivalent convention regulations. There is no model regulation in international law with respect to protection of travellers using the services of tour operators, to which the European Union legislator could refer. Traveller protection in international law consists most of all of the introduction of certain limitations as to the contractual relationships between a tour operator and a traveller so it is not too burdensome for the traveller. Thus, generally the point is not to grant a traveller new rights compared to general provisions on contractual liability but to stop tour operators from imposing on travellers conditions which are difficult to accept from an axiological perspective using the fact that these provisions are *ius dispositivum*. Such an approach results from monitoring the travel service market and tour operators' abuse of the principle of freedom of contract as determined. Accordingly, it would seem that the method of protection as applied is in line with the postulate of consumer law, that is the restoration of balance between the entrepreneur and the consumer, disturbed by entrepreneur's dominant economic, organizational and legal position (Łętowska, 2006, p. 42). However, it is difficult to miss that the method of regulation applied strengthens certain deviation from standards resulting from general rules connected with contractual liability to the detriment of a traveller. A similar level, and in some aspects even higher, of protection of travellers could be achieved by applying to the package travel contract general rules on performance or the consequences of non-performance or improper performance of contracts contained in the civil codes of the particular states. These provisions are, however, as a rule *ius dispositivum,* thus the tour operators could exclude their application in contracts made with travellers, which would not guarantee adequate protection for said travellers.

Noticeably, directive no. 2015/2302 contains solutions which strengthen the position of tour operators with respect to general rules. An example of this is the provision of Article 11 (1) which allows a tour operator, with no risk of liability for applying prohibited contract clauses, for a reservation in a contract of a right to implement unilaterally nonsignificant changes. A similar regulation applies in the context of an increase in the price of package travel, providing the conditions of Article 10 (1&3) were met and it does not exceed 8% of the original total price. Such changes do not give the traveller the right to terminate the contract without bearing the costs of such termination. Also, a reservation in a contract regarding the limitation of compensation to three times the whole price of package travel under Article 14(4) of the directive, if such provision did not exist, would be considered a prohibited contractual clause (in Poland Article 385^3(2) of the Civil Code).

Conclusions

As results from the findings above, the European Union institutions applied various instruments and methods of protection of passengers using the services of carriers and tour operators. In the context of carriage services, the European Union legislator applied an instrument in the form of regulations, which do not contain, however, a comprehensive regulation of a contract of carriage for a given mode of transport, but only correct and supplement regulations contained in international conventions. Even though a regulation guarantees the most far-reaching

harmonisation of the regulations within EU territory, but the method applied to regulate it gives rise to problems resulting from regulating a service of carriage with multiple legal acts issued by various legislators (at European Union, international and domestic levels). When it comes to the provisions regulating contracts for package travel, the European Union legislator used an instrument of a directive with a maximum level of harmonisation and generally refrained from granting travellers new rights with respect to general rules of performance of a contract and consequences of non-performance, which result from civil law. The European Union legislator wanted rather to introduce a certain – admissible from the axiological perspective – level of use of freedom of contracting by tour operators, allowing tour operators to impose on the weaker party to a contract, the traveller, unfavourable conditions. Moreover, it may seem that in some cases the point was to provide a tour operator itself with additional rights, which it would not have obtained even through contractual clauses without being accused of introducing prohibited clauses to a contract.

Irrespective of that, the choice of a different measure of regulation (a directive) than in the case of a contract of carriage of passengers, poses a risk of improper implementation. Unfortunately, the Polish act on package travel and linked travel arrangements is an example of this.

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MANAGING TALENTED EMPLOYEES

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Abstract

The main goal of the article is to present the results of research on the preparation of managers to "lead" talented people. The conducted research was of a pilot nature. In the first part of the article, several most popular definitions of talent are quoted. Then, the essence of "talent management" is provided. This is followed by the presentation of the "talent management" model concept. Based on the opinions of the respondents, the actions taken in practice towards talented people as well as diagnosed causes of fluctuation of talented people are described. The assessment of the degree of preparation of managers for dealing with talented people is made. The factors determining the functioning of "talent management" programs are shown. Afterwards, behaviors shaping the image of an employee as a professional or expert are presented. The analysis of research results allows for formulating conclusions that can be used in the design of "talent management" programs.

Introduction

The globalization of the economy has made knowledge the driving force behind financial, economic and social transformations. Man is the source of this knowledge, while employees are understood as human capital. They represent the added value of any organization. In today's economy, the competitive advantage is not built on

the reduction of production costs, but on the purposeful and effective construction of intellectual capital. Its values include first and foremost knowledge and information.

The development of civilization is associated with change in all areas of society. This increases the complexity of the environment of operating organizations. The environment is (and is becoming more and more) turbulent and stormy. In such conditions, strategic management, knowledge management and talent management gained special significance for the functioning of an organization. Particular attention should be paid to the approach to the most valuable resource available to any organization, i.e. people.

The development of employee competencies has become the key activity of the managerial staff. Managers recognize the importance of talents for the development and operation of the organization. Moreover, the concept of talents was popularized at the end of the last century. The development of modern technologies has caused that the demand for employee talents exceeds their supply. As a result, the employee talents market has become the most competitive since the 1990s (Jabłoński, 2015, p. 35). It has been realized that the number of talents is limited.

The essence of talent management

There are numerous definitions of the term "talent" in the literature on management studies. The expressions such as "key employees", "employees with high development potential" and "employees with above-average results" are frequently used in scientific studies as regards talented persons.

The notion of "talent" derives from the Greek word *talanton*, which meant the unbearable burden for one person (Chełpa, 2015, p. 28).

According to L.A. Berger and R.B. Berger, talented people demonstrate higher than average achievements, inspire others to achieve above-average results, understand the key competences and values of the organization. Losing them reduces organizational growth because of their disproportionate impact on the organization's current and future performance (Ingram, 2011, p.14).

A. Pocztowski, on the other hand, believes that a talent is an individual who is guided by an internal goal, unchanged over a longer period, at the same time bringing his/her own goal to the organization (Pocztowski, 2011, p. 36).

Talent management can be treated as knowledge management, the skills of each employee occupying a specific position and contributing to the development of the organization. The art of management consists in clear definition of the company's strategy and needs and proper identification and utilization of these resources for the benefit of the organization and the employee (Antczak, 2010, p. 149). The art of talent management consists in the fact that the lack of patterns means that there are no established directions for the development in this field (Ingram, 2011, pp. 22–23). All this causes that talent management is evolving (drifting), however the results of this drift are impossible to specify. The main reasons for this are the struggle for a competitive advantage and the *war for talents.*

Human resources management, due to its nature, cannot be schematized (Pocztowski, 2008, p. 48). Therefore, talented people (as a rare good) elude classification and pose a problem and challenge to the personnel function. People, intellectual capital and talents are perceived as success factors in the organizational strategy.

Numerous models of talent management can be found in the literature on management. One of them is the model by T. Listwan (Figure 1). Its simplicity gives it special meaning.

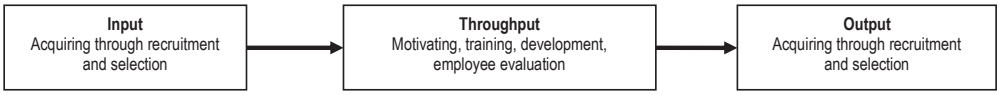


Figure 1. Talent management model by T. Listwan

Source**:** Listwan (2005), p. 22.

It builds on the classic concept of human resources management functions. The first stage is input. Acquiring talented people through appropriately designed recruitment and selection plays an important role here. The next step is throughput. These are the actions of managers focused on the professional development of talented people through training and up-skilling and the proper implementation of the human resource management sub-function, i.e. the employee evaluation. All this serves the right stimulation to motivate talents. The final stage is the output of the organization.

In the recent past, people saw companies as a source of livelihood. Today the situation is slightly different. It is companies that seek people (talented workers).

In such conditions, the "talent management" programs gain significance. They focus on the recruitment of talented people and professional development. Their task is also to create such conditions and work atmosphere to keep the most valuable employees. The result of such actions is the effective use of the talented persons' abilities in order to develop the company and implement its strategy.

Methods and characteristics of the research sample

The following research methods were used in the studies presented in this article:

- the critical literature review method (literature in the field of talent management, employee development, management of knowledge),
- participant observation method (related to running one's own business),
- the analysis of secondary sources (studies of similar scope),
- diagnostic survey with company employees related to sub-functions of personnel management.

Triangulation of research methods was used in order to authenticate the research. This allowed to obtain a broader context of the studied phenomenon and ensured a higher quality of the conducted research. Differentiation of methods was aimed at obtaining consistency of the empirical basis for inference. The diagnostic survey method was adopted as the leading (main) method in the research work, while others were used as ancillary (supplementary) ones.

The study involved students of three universities in the Lower Silesian Voivodeship. They were students of part-time studies. In total, 327 people were examined. The vast majority of respondents were women. The breakdown of respondents by gender is shown in Figure 2.

Most of the respondents (56%) were young people aged 19–24. About 31% of respondents were students aged 25–35. Persons over 40 years of age constituted only 6% of the research group. The fact that young people take up learning at universities proves that they are aware of the fact that intellectual capital is an added value not only to an organization but also to an individual. When they start learning, they are aware of their competency gaps

in knowledge or skills. They are at the beginning of their professional career where the field of exploration and the finalization of the choice of profession have been narrowed down. Figure 3 displays the age of respondents.

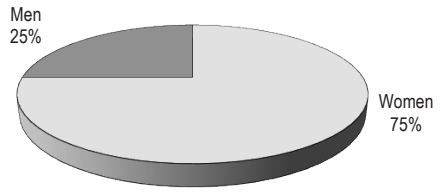


Figure 2. Gender breakdown of the study group

Source: own study.

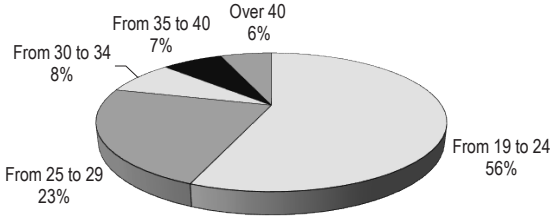


Figure 3. Study group by age

Source: own study.

The vast majority of the surveyed group is employees of large companies employing over 100 workers (38.5%). About 15.9% of respondents worked in companies employing from 21 to 50 people, and 14.1% of respondents were employees of companies with from 51 to 100 workers. The employment of respondents by to the size of the company is shown in Figure 4.

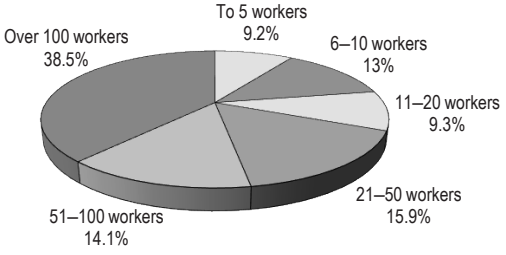


Figure 4. Employment of workers by company size

Source: own study.

The main research tool was a diagnostic survey using a questionnaire. The questionnaire consisted of twenty closed and two open questions. In the questionnaire, the respondents, i.e. the people surveyed, were distinguished by gender, age and by the size of a company (as a place of employment). The main purpose of the survey was to collect data on the studied reality regarding the issues of talent management and the functioning of development programs targeted at employees. The questionnaire was divided into three parts. The first part concerned talented people, the second part was closely related to the "talent management" programs, and the last one was a statistical part. The use of a highly categorized questionnaire allowed for the transparent arrangement of responses in tabular summaries as a relatively simple and direct way to collect data and information, as well as easy to further statistical processing.

Conditions of functioning of talented persons

The research attempted to define what diagnosing an employee as a "talent" means in practice. Respondents were asked about the opinions, and their responses are presented in Figure 5.

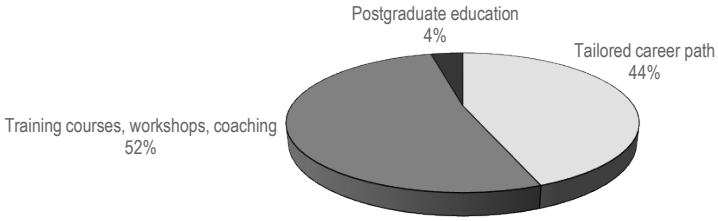


Figure 5. Actions taken towards people diagnosed as "talents" in respondents' opinion

Source: own study.

According to the surveyed, in practice, diagnosing an employee as "talent" means additional training, workshops, coaching, as stated by more than 52% of the respondents. When designing such activities, it should be remembered that adults are a specific training group. Their expectations regarding the progress of the training and the trainees themselves are high. In carrying out such projects, modern methods and techniques of training and professional development should be applied. It is said that such trainings should be "tailored", taking account of expectations of individual workers. The trainings implemented should correspond to the development direction of a particular employee or his/her motivation.

A lower number of the respondents (44%) state that defining an employee as a talented person means an individual career path. Defining an employee as a "talent" is a very important premise that should be linked to after-effect plans. The career path should, however, be subject to control in order to verify the activities carried out and, if necessary, allow for possible changes and corrections. It must be remembered that employee displacement plans have to be correlated with employee training and professional development plans.

Only 4% of students claim that this diagnosis means sending for postgraduate studies, which confirms the specifics of adults as a training group.

The phenomenon of the so-called "wars for talents" is visible in the functioning of modern organizations. Managers should treat talented employees' leave as a phenomenon extremely unfavorable for the development and survival of the organization. The studies revealed the reasons why talented people resign from the work, as is shown in Figure 6.

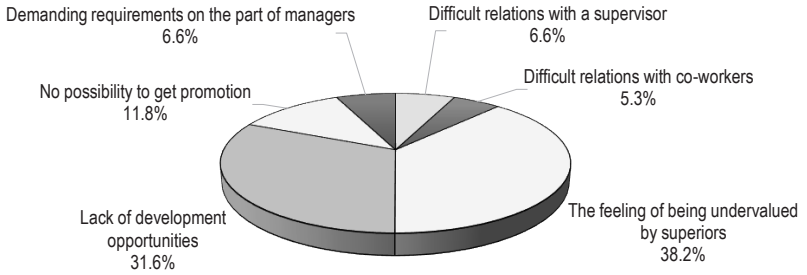


Figure 6. Respondents' opinions on the reasons why talented people resign from work

Source: own study.

A significant part of the respondents (38.2%) blame superiors for talented employee leaves. They are accused of undervaluing "talented people". About 31.6% indicated that the reason for leaving the company was the lack of development opportunities. This confirms the fact that superiors do not create a good climate for the use of "talents" and that they do not perceive them as the intellectual capital of the organization. They do not see them as the most valuable "resource" available to an organization, i.e. people. About 12% of respondents believe that the reason for leaving the company is the lack of promotion prospects. Such answers are a kind of surprise since the vast majority of respondents are employed in large companies with more than 100 staff. This points to the lack of responsibility of managers and human resources departments, or their ineptitude. They do not design the career trajectories for employees, which is what talented people expect.

Less important reasons for talented people's leave are difficult relations with the supervisor (6.6%), excessive management requirements (6.6%), difficult relations with co-workers (5.3%). These are problems that practically all organizations face and they are inevitable. What deserves attention, however, is that no man has found that difficult relationships with co-workers may be the reason for giving up work. Respondents working in smaller service companies with up to 20 employees were also of the same opinion. Smaller organizations probably have friendly relations between colleagues, and the work itself is a pleasure. It should be noted that a friendly atmosphere, a good climate of cooperation and trust lead to better work efficiency.

Respondents aged 30-40 are of another opinion. Their opinions are presented in Figure. 7.

The vast majority of young employees indicate lack of development opportunities (36.8%) and lack of promotion prospects (26.3%) as factors decisive for the leave of "talented people". These people are at an early stage of their professional career. Their expectations towards employers are crystallized. Lastly, they want to develop and acquire new levels of professional competence. In the end, they want to satisfy their own ambitions. Therefore, the selection of the management staff is of particular importance. Managers should be able to scan the organization's

surroundings in search of talented employees. The information obtained should be provided to superiors and human resources departments. They should also act as spokesmen for workers.

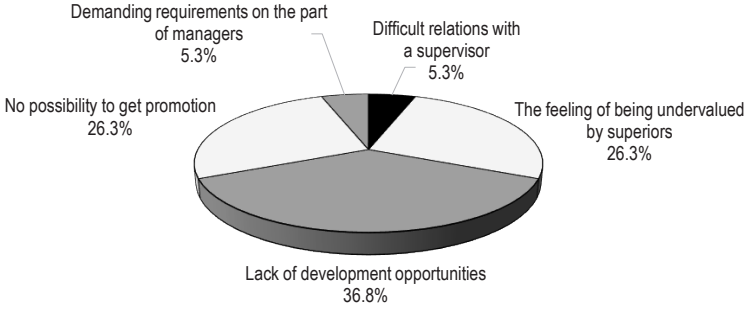


Figure 7. Respondents' opinions on the reasons why talented people resign from work Respondents aged 30–40)

Source: own study.

The respondents' opinion regarding the preparation of managers for individual employee management is presented in Figure 8.

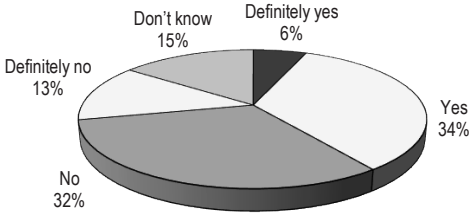


Figure 8. Assessment of managers' preparation for individual employee management

Source: own study.

About 40% of respondents believe (by stating yes or definitely yes) that managers are prepared for individual employee management, regular meetings, feedback, progress monitoring, as well as taking on the role of a mentor. It is a difficult task and requires a lot of experience from the manager. Distribution of tasks and their differentiation depending on the potential of workers are of great significance. Talented people should be assigned tasks that are more difficult, more complicated and forcing creativity. The increase in employee competence potential is also affected by job rotation and change of areas of activity. Such actions taken by the manager give the opportunity to check the talented person in practice. The period after selecting talented people is one of the most difficult stages. Then, the managers responsible for their development are assigned to employees. The research results, where 45% of respondents claim that managers in their organization are not ready for individual employee management

testify that this is a complicated task. Therefore, this period is the hardest test for managers over the entire talent management process.

In the next stage of the research, an attempt was made to identify the factors determining the functioning of "talent management" programs in the organization. The results are shown in Figure 9.

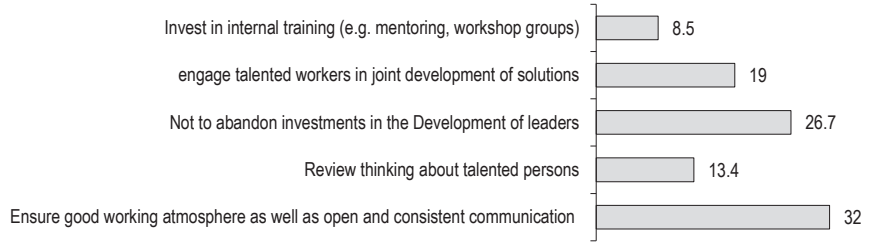


Figure 9. Factors determining the functioning of "talent management" programs in the organization in the respondents' opinion (%)

Source**:** own study.

Over 32% of respondents believe that a good working atmosphere, as well as open and consistent communication are among the factors determining the functioning of talent management programs. Maintaining a good working atmosphere, consistent and open communication is primarily a task for managers in the organization. They are the main creators of organizational culture. It should be remembered that good interpersonal relations with management and other co-workers not only positively affect motivation but can also compensate for other inconveniences in the company. Therefore, this type of support for talented employees is necessary, both on the part of superiors and other team members. Open and consistent communication positively influences building trust and loyalty in the team. Lack of a good atmosphere may lead to reluctance of the managers to talented people, lack of faith in their abilities and, finally, depreciate their value.

The next essential factor is not to abandon but take care of the development of leaders (26.7%). The respondents appreciate the importance of teamwork and common values. In today's organization, leadership is teamwork of a competent manager targeted at achieving goals set by the organization. Both the leader and the team undertake activities that guarantee the achievement of the organization's success. It gives a sense of co-creation of the company. Noteworthy is also (as indicated by 19% of respondents) engaging talented workers in joint development of solutions. The development of talent is influenced by the tasks to be carried out, as well as events and completely accidental situations related to the performance of duties at the workplace. When trying to solve them, creativity and entrepreneurship of the talented is "freed". Owing to this, talented people are able to take risks while fulfilling tasks, and introduce new concepts or ideas.

It was found to be insignificant to review thinking about talents (13.4%) and invest in internal training (8.5%).

In the conducted research, the behaviors shaping the image of a talented employee were identified. The results are displayed in Figure 10.

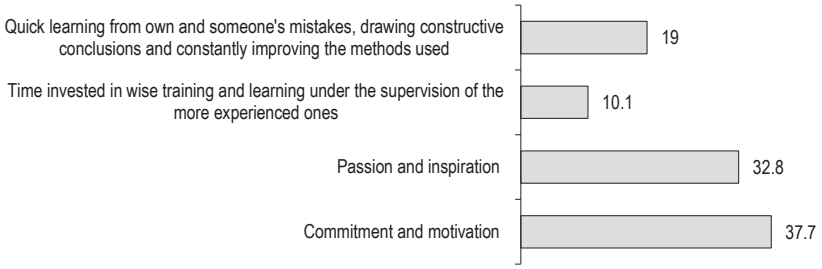


Figure 10. Opinions about behaviors that shape the image of an employee as a specialist/an expert (%)

Source: own study.

Commitment and motivation are behaviors that characterize talented people (37.7%). The respondents 'opinions are in line with some research findings regarding specialists and people of success, that we are not born with talent. People only have certain predispositions that facilitate the development of specific skills. Commitment, determination and dedication are necessary to reach a master level in them. It is a long-lasting process, lasting several or even tens of years.

According to 32.8% of respondents, passion and inspiration are important. Passion is defined as a strong fondness for something, while inspiration is afflation or eagerness for something. The meaning of these words results in freedom in action and in the inner need for self-fulfillment.

Quick learning from mistakes, drawing constructive conclusions and constantly improving the methods and strategies applied, testing and trial and error methods, as well as self-improvement are important behaviors in shaping talents for 19% of respondents.

The respondents do not attach importance to the time invested in wise training and learning, under the guidance of the more experienced persons (as indicated by 10.1%). In organizations, too little importance is attached to training and professional development. Such undertakings must be usually covered out of employees' own financial resources.

Conclusion

The essence of implementing talent management programs is to gain a competitive advantage on the market and retaining talented people important to the organization. The functioning of such programs has a very positive impact on the image of the organization on the external labor market. This ensures the inflow of new, talented workers.

The employee's determination and individual desire to develop are usually sufficient to improve the potential. Commitment and motivation are behaviors that characterize talented people. The involvement of the managerial staff in the talent management process allows for much faster development of employee competencies. This is "acceleration" that is the desired effect of talent management programs.

Talent management is not just about identifying talented people by managers and directing them to various types of training or courses. The challenge is to use them efficiently and skillfully over their entire working lifetime. Therefore, talented people ought to receive a planned support and individual career paths (professional development). It is a task for managers at particular levels in the organizational structure and HR departments. Talent management

programs should be "tailor-made". It must be borne in mind that employees only have certain predispositions that facilitate the development of specific skills. They should be aligned with current and future needs of the organization and meet expectations of the employee. In practice, this means additional training, workshops and coaching for the employee. A significant part of the respondents in the research confirmed the fact that the lack of opportunities for development or promotion is the reason for the fluctuation of talented people.

Companies do not care for a good working atmosphere or professional development of talented people. Organizations neither invest in the employees' development nor create opportunities for promotion and professional development. It should be remembered that the accumulated "intellectual capital" brings measurable results and benefits to the company. The underestimation of employees' values is evidenced by the fact that only two people were sent for studies by employers. Managers should be aware that a good working atmosphere and a friendly climate are conducive to improving efficiency. The lack of positive interpersonal relationships causes conflicts and demobilization for effective work. Undervaluation of talented people by superiors is the main reason for resignation from work.

Employees qualified for talent management programs should take into account additional work and increased work intensity. Superiors and co-workers' expectations towards them from are greater. Therefore, their actions are less permissible to make mistakes or possible failures.

Talent Management is the most effective way to retain talented people in the organization. Bearing in mind the increasing globalization and business cycles, organizations ought to develop talents using their potential during the crisis and prepare for the next stage of economic growth.

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INFLUENCE OF THE KURTOSIS VALUE ON THE RESULT OF GOODNESS OF FIT TEST FOR THE DAILY RATE OF RETURN ON SELECTED WIG20 AND WIG30 COMPANIES

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ABSTRACT In the paper, the modeling of empirical distributions of return rates on WIG20 and WIG30 companies was conducted. The validity of the hypothesis was tested, which stated that the fitting of theoretical distributions to empirical distributions of return rates – where the fitting was tested by the chi-squared test – depends on the value of kurtosis. In order to prove the validity of the hypothesis, studies on four sets of diversified data were conducted.

Introduction

This work has been inspired by the observations made while working on paper (Bednarz-Okrzyńska, 2016), where modeling of empirical distributions of return rates on WIG20 companies was conducted by means of theoretical distributions.

On the basis of the studies conducted in the aforementioned work, the dependence of the value of excess kurtosis on the time interval applied in measuring return rates was observed. Namely, for the daily data, the excess kurtosis equaled 4.112, and for the monthly data – 1.232. At the same time, the influence of the time interval used in return rate measurements on the results of modeling empirical distributions of return rates using the Gaussian and Laplace distributions was also observed. Namely, the normal distribution provided a better fit for the monthly data, and the Laplace distribution proved more useful for the daily data.

The results obtained in paper (Bednarz-Okrzyńska, 2016) point toward the relationship between the value of excess kurtosis and the result of goodness-of-fit test applied to the above mentioned theoretical distributions. Therefore, this paper concentrates on the issue of influence of the value of excess kurtosis on the result of a goodness-of-fit test.

Below, the basic relations, used later throughout the paper, are presented.

First order moment *m* (mean value) is derived from formula

$$m = \frac{1}{N} \times \sum_i x_i \tag{1}$$

where: x_i- observations; i = 1, 2, 3, ..., N.

The variance is given by:

$$V(X) = \frac{1}{N} \times \sum_i (x_i - m)^2 \tag{2}$$

Fourth central moment is given by:

$$M_4 = \frac{1}{N} \times \sum_i (x_i - m)^4 \tag{3}$$

Standardized fourth central moment KU (kurtosis) is derived from formula (Krishnamoorthy, 2006; Sobczyk, 2004):

$$KU = \frac{M_4}{[V(X)]^2} \tag{4}$$

Another measure derived from the kurtosis is *excess ex* (Sobczyk, 2004):

$$ex = KU - 3 \tag{5}$$

where: *KU* is given by (4).

Yet another relation describing concentration K can be found in (Tarczyński, 2002):

$$K = \frac{N^2(N+1)}{(N-1)(N-2)(N-3)} \times KU - \frac{3(N-1)^2}{(N-2)(N-3)} \tag{6}$$

where: KU is given by (4).

From (5) and (6) follows: $K \xrightarrow{N \to \infty} ex$, which means that for a large sample the values of concentration *K* will be close to the value of *excess ex.*

In this paper formula (6) will be applied. Papers (Bonato, 2011, pp. 77–87; Kim, White, 2004, pp. 56–73) create certain confusion, since they define kurtosis by means of equation (5). The clarification can be found in (Kotz, Kozubowski, Podgórski; 2001), where equation (5) is referred to as excess kurtosis. It may be assumed that the authors of papers (Bonato, 2011, pp. 77–87; Kim, White, 2004, pp. 56–37) use the phrase 'kurtosis' in place of 'excess kurtosis' for the sake of simplification. When following papers (Bonato, 2011, pp. 77–87; Kim, White, 2004, pp. 56–77) in this paper, the term 'kurtosis' will be used with reference to formula (6).

For the normal distribution, kurtosis takes the value K=0, however for the Laplace distribution K=3. This means that the value of kurtosis should have an impact on the results of the goodness-of-fit test when modeling empirical distributions of return rates using the Gaussian and Laplace distributions.

The primary goal of this paper is to determine the validity of the hypothesis which states that the fitting of theoretical distributions to empirical distributions of return rates – measured with the chi-squared goodness-of-fit test – depends on the value of kurtosis.

In order to validate the hypothesis, appropriate studies will be conducted on the sets of data of diversified nature.

Therefore, four sets of data were investigated including return rates on selected WIG companies. Set A included daily, weekly and monthly data on: WIG, WIG20, MWIG40, SWIG80 indexes and WIG20 companies from the period of one year, 2013. It comprised in total 72 observations.

Set B included return rates on the same indexes and companies as Set A, however it comprised only the daily data from the period 2010–2013 including 89 observations.

Set C included daily return rates on WIG and WIG20 indexes as well as WIG20 companies covering the period 4.10.2001–30.08.2017. Within this time interval, four boom subintervals (H4, H5, H6, H7) and three slump subintervals (B4, B5, B6) were identified. The analysis comprised WIG20 companies which were listed on the WIG20 index during each slump and boom period under study. The following boom and slump periods were identified: Boom 4 – from 4.10.2001, comprising 1,444 trading sessions; Slump 4 – from 6.07.2007, comprising 403 sessions; Boom 5 – from 17.02.2009, comprising 541 sessions; Slump 5 – from 7.04.2011, comprising 93 sessions; Boom 6 – from 5.06.2012, comprising 725 sessions; Slump 6 – from 8.05.2015, comprising 176 sessions and Boom 7 – from 27.06.2016, comprising 296 sessions. Set C included 136 observations.

Set D comprised daily return rates on WIG30 bank sector stocks covering the period of three years from 30.05.2014 until 31.05.2017. Within this time interval, three subintervals were identified: Period I from 31.05.2016 until 31.05.2017, Period II from 29.05.2015 until 31.05.2017 and Period III from 30.05.2014 until 31.05.2017- the set comprised in total 30 observations. The following bank sector companies were considered: ALIOR, BZWBK, HANDLOWY, INGBSK, MBANK, MILLENNIUM, PEKAO, PKOBP.

Results of calculations

The data set A comprised the values of daily, weekly and monthly return rates on WIG20 companies in 2013.

For the sake of clarity, Figure 1 presents the results of calculations for 40 observations out of 72. The lines topped with circles K_i show the values of concentration. The dashed line BG marks the value of the concentration threshold. Symbol Hpn marks the result of the chi-squared test. Presence of a bar (Hpn = 1) means a positive result of the test. And the lack of a bar (Hpn = 0) corresponds to a negative result of the test. It was expected that for the concentration larger than the value of threshold BG, a negative result of the test would be obtained. In fact, there

were six cases when the concentration exceeded the value of the threshold BG = 3.4, and in five cases a negative result of the goodness-of-fit test was obtained. Hence the value of ratio $NEGG = \frac{5}{6} = 0.833$. Generally ratio NEGG is given by:

$$NEGG = \frac{LN}{LG} \tag{7}$$

where:

LG – number of cases when K > BG in total,

LN – number of cases when K > BG and Hpn = 0.

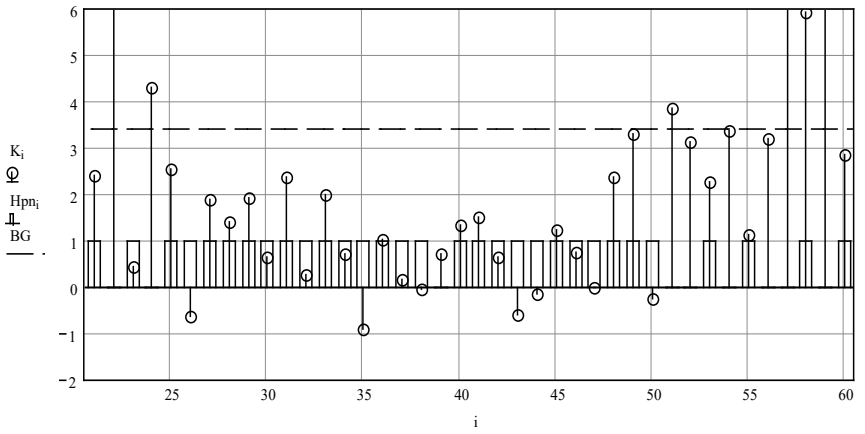


Figure 1. Sample results of calculations for Set A of the data. Concentration K marked by means of lines topped with circle K_i. Dashed line BG marks the threshold value of concentration. Symbol Hpn marks the result of the chi-squared test (bars)

Source: author's own study.

Figure 2 presents the values of ratio NEGG as a function of threshold value B1. The largest value of ratio NEGG = 0.833 corresponds to the threshold value B1 = 3.4.

Figure 3 made for Set A corresponds to the Laplace distribution – labeling the same as in Figure 1. This time it was assumed that for the concentration smaller than the value of threshold BL, a negative result of the chi-squared test would be obtained. Ratio NEGL is given by:

$$NEGL = \frac{LN}{LG} \tag{8}$$

where:

LG – number of cases when K < BL in total,

LN – number of cases when K < BL and HpL = 0

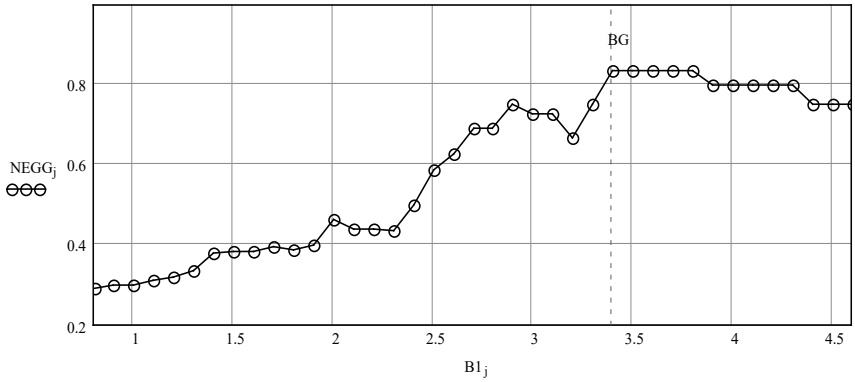


Figure 2. Values of ratio NEGG as a function of the threshold value B1 (Set A)

Source: author's own study.

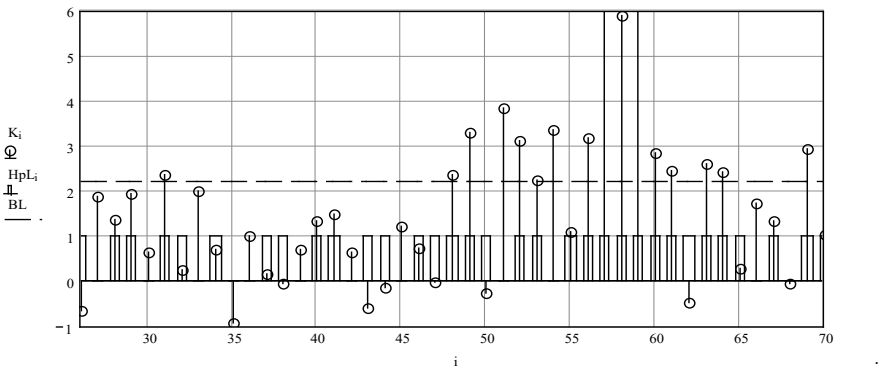


Figure 3. Results of calculations for the Laplace distribution (Set A of the data). Symbol HpL marks the result of the chi-squared test (bars). The rest of the labeling is the same as in Figure 1. The figure was made for BL = 2.2

Source: author's own study.

Figure 4 presents the values of ratio NEGL for the changing threshold value B2. For threshold value BL = 2.2, the largest value of ratio is obtained $NEGL = \frac{LN}{LG} = \frac{14}{47} = 0.298$.

Subsequent calculations were made for Set B – values of daily return rates on WIG20 companies in the period 2010–2013.

In Figure 5 two threshold values BG1 and BG2 were singled out. For BG1 = 4 ratio $NEGG = \frac{LN}{LG} = \frac{15}{16} = 0.938$ and for BG2 = 5.3 ratio *NEGG* = 1 (LN = LG = 6). For threshold value BG2, the largest value of *NEGG* can be observed, and for threshold value B1, the largest number of observations – 15 out of 16 – can be observed.

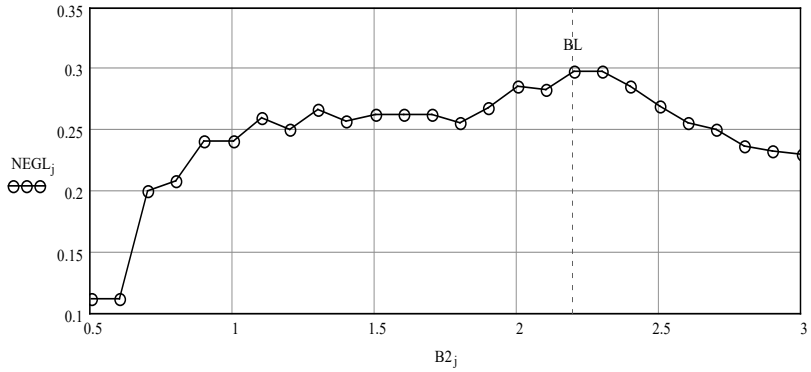


Figure 4. Values of ratio NEGL as a function of threshold value B2 (Set A)

Source: author's own study.

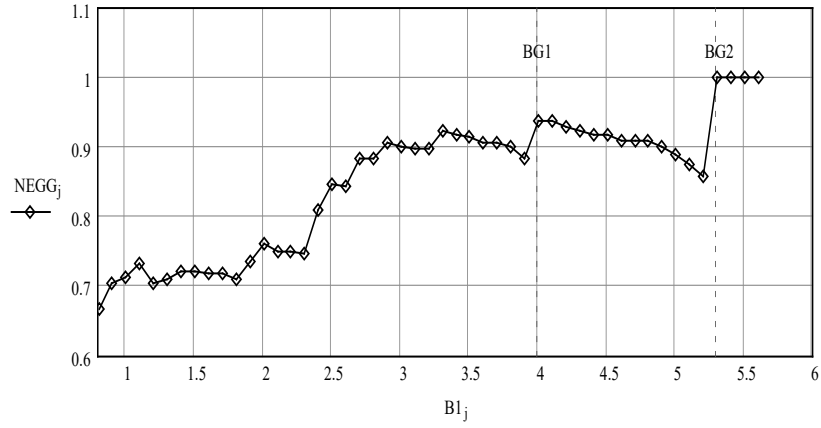


Figure 5. Values of ratio NEGG as a function of threshold value B1 (Set B)

Source: author's own study.

In Figure 6 two threshold values can be found BL1 = 0.7 and BL2 = 1.1 for which NEGL = 0.5. However taking into account the number of observations, value BL2 should be rated more highly, for which $\frac{9}{18} = 0.5$ can be observed, while for BL1, only $\frac{4}{8} = 0.5$ can be observed.

Figure 7 was made for Set C of data.

In Figure 7 threshold value BG = 3.9 can be found for which ratio NEGG assumes the highest value, NEGG = 0.933.

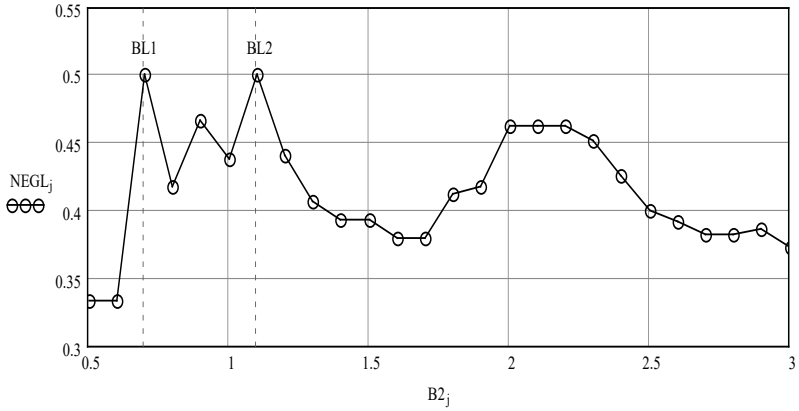


Figure 6. Values of ratio NEGL as a function of threshold value B2 (Set B)

Source: author's own study.

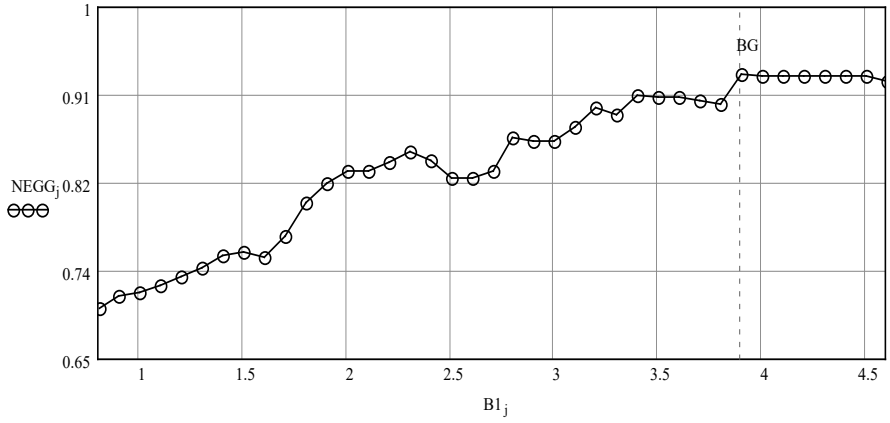


Figure 7. Values of ratio NEGG as a function of threshold value B1 (Set C)

Source: author's own study.

In Figure 8 threshold value BL = 2.6 can be found for which ratio NEGL assumes the highest value, NEGL = 0.552.

The last set of data (D) comprised the values of daily return rates on WIG30 bank sector stocks. Figure 9 presents the values of ratio NEGG as a function of threshold value B1. From the results presented in Figure 9, two threshold values were determined: BG1 = 2.4 for which $NEGG1 = \frac{10}{11} = 0{,}909$, and BG2=3.3, where $NEGG2 = \frac{5}{5} = 1.0$.

In Figure 10 threshold value BL = 1.2 can be found for which ratio NEGL assumes the highest value, NEGL = 0.875.

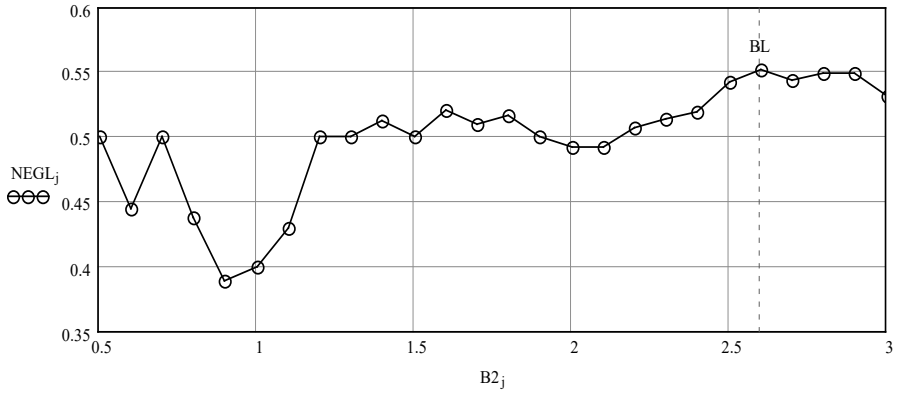


Figure 8. Values of ratio NEGL as a function of threshold value B2 (Set C)

Source: author's own study.

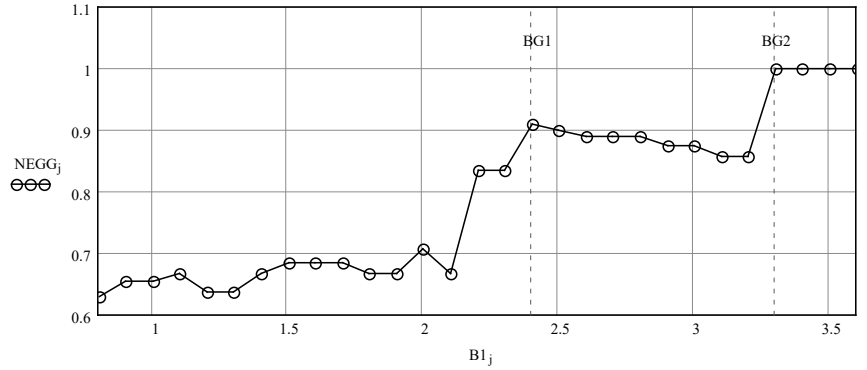


Figure 9. Values of ratio NEGG as a function of threshold value B1 (Set D)

Source: author's own study.

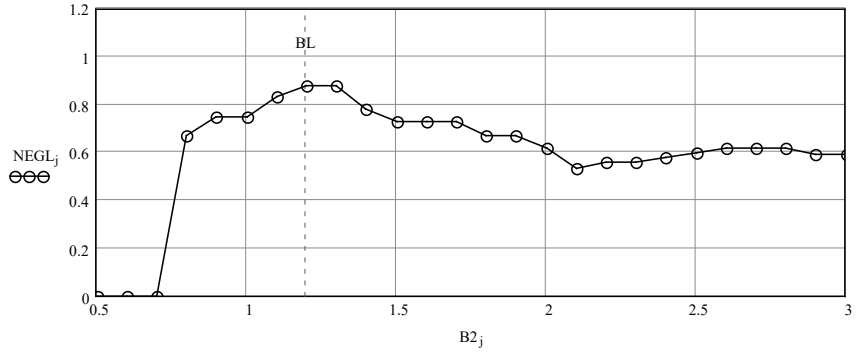


Figure 10. Values of ratio NEGL as a function of threshold value B2 (Set D)

Source: author's own study.

Conclusions

Table 1 comprises the results of the calculations for particular sets of data.

Table 1. Compilation of calculation results for the data in sets A, B, C and D

Set of data	Gaussian distribution		Laplace distribution	
	threshold value bg	maximum negg	threshold value bl	maximum negl
A	3.4	0.833	2.2	0.298
B	4.0	0.938	0.7	0.500
	5.3	1.000	1.1	0.500
C	3.9	0.933	2.6	0.552
D	2.4	0.909	1.2	0.875
	3.3	1.000		

Source: author's own study.

The results in Table 1 prove that the order of the data sets: A, B, C, D was not coincidental – the order corresponds to increasing maximum values of ratios NEGG and NEGL. The worst results for Set A stem from the heterogeneity of the data: daily, weekly and monthly values of return rates. As it was already mentioned in Introduction, the value of kurtosis for the monthly data was 3.34 times larger than for the daily data. Set A was included in the paper on purpose, however, so as to warn against combining return rates with different measure time intervals.

Sets B and C yield similar maximum values of ratios NEGG and NEGL, which results from the fact that they comprise homogenous (daily) data.

The best results were obtained for Set D, which comprised the data of doubled homogeneity, since they were daily data and the companies represented the same sector (banking).

As far as the hypothesis put forward in Introduction is concerned, it should be noticed that the hypothesis was validated for the normal distribution, since the maximum values of ratio NEGG > 0.9 – obtained for Sets B, C, D – are satisfying. In the case of the Laplace distribution, no unequivocal answer was found. Sets B and C did not provide decisive results. Only in the case of Set D, the value of ratio NEGL = 0.875 can be accepted as supportive evidence for the hypothesis.

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INTERNATIONAL INSOLVENCY PROCEEDINGS – DESIRED DIRECTIONS OF CHANGE AND IMPLEMENTATION

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ABSTRACT

The unification of European insolvency law has been achieved via UNICITRAL model solutions, but also by way of European Parliament and Council Regulation No. 2015/848 regarding insolvency proceedings (recast version), and national legislation; in the case of Poland, this was the Law on Insolvency and Reorganisation of 28 February 2003. Insolvency law thus regulated leads to a great simplification in the application of its norms, and also contributes to their standardisation. Therefore, it should be possible to resolve insolvency proceedings in a similar way regardless of the EU member state and the legal system in operation there. Very simply, these regulations operate under the assumption that the failing debtor is operating in two or more member countries. However, in extreme cases, this kind of proceedings can also be applied when the debtor holds assets in only one of the countries in question. With such a structure there are two essentially complementary proceedings, in the form of the main foreign insolvency proceedings and secondary insolvency proceedings, and also territorial proceedings. The aim of the study is to show the mutual relations between the particular types of proceedings and arrangements, and which of them and in what order they should be carried out in order to conduct insolvency proceedings effectively. Against this background the international aspect has proved highly important, indicating that these proceedings are guaranteed for courts or bodies acting and issuing decisions, whose scope and timing play a crucial role in the selection of one of the aforementioned types of proceedings in order to effectively satisfy the creditor claiming repayment from the failing debtor.

Introduction

Going out of business, whatever its type, in some cases requires international insolvency proceedings. This applies in particular to situations in which an entrepreneur runs their main business in an EU member state, where it has its registered office and branches, or a subsidiary in the territory of one or more countries. The aim of the study

is to indicate the need to implement a single model of bankruptcy proceedings in Poland and other EU Member States.

From a legislative point of view, issues of this kind are dealt with by international insolvency proceedings, in particular the provisions of Art. 378-417 of the Law on Insolvency and Restructuring of February 23, 2003 (hereinafter referred to as "IL"), the central issue of which is based on the regulations of the "model law" of 1997, drawn up by the United Nations Committee on International Trade Law (UNICITRAL). These issues are also covered by European law in the form of Regulation (EU) No 2015/848 of the European Parliament and of the Council of 20 May 2015 on insolvency proceedings (recast). Since, in this case, we will be dealing with legislation in the form of an EU regulation, its provisions apply directly. Therefore there is no need to enact, as in the case of EU directives, additional national statutory provisions. As a result, the provisions of the IL can only be applied in a subsidiary manner to this regulation. The opposite position could lead to a conclusion contrary to the principles of European law, in this case distorting the idea of a common legal space. And if this is the case, then the situation to which the provisions of the IL will apply in international insolvency proceedings is clear, but only in relation to those entities that do not come from an EU Member State. Consequently, the provisions of the Regulation will also not apply to insolvency proceedings initiated in the Kingdom of Denmark, which has not adopted European law in this regard. In view of the scope of international insolvency legislation, it is relatively easy to create a definition that reflects its essence.

Therefore, it can be assumed that international insolvency proceedings are those conducted against an insolvent entity which owns assets in two or more countries (Zedler, 2016, p. 247). However, since there are many variables, these proceedings can be presumed to have a special and general character. As a result, investigating the insolvent entity's assets and their location in order to initiate and conduct the proceedings with success is of enormous significance as to the consequences it brings for the subject covered by it. We are, therefore, dealing with cross-border insolvency proceedings.

In this context, the initiation of international insolvency proceedings depends on the legal system of each of the countries in which the debtor becomes insolvent. It is precisely then, according to the wording of art. 379 point 1 of the IL that foreign insolvency proceedings apply, by which we should understand legal, administrative or other proceedings subjected to foreign court supervision, the subject of which is to pursue claims against an insolvent debtor, or a debtor who is in danger of insolvency. Under this regulation, particular attention should be paid to the further wording of this definition, which indicates that insolvency proceedings may cover both property and affairs concerning the debtor that are subject to the control or management of a foreign court or a foreign administrator for their restructuring or liquidation. At the same time, the concept of foreign trustee should be interpreted in the manner provided in the regulation of the European Parliament and Council 2015/848, and thus as a person or entity whose task it is to verify and recognise the claims submitted in insolvency proceedings or to manage in whole or in part the property of which the debtor's management has been withdrawn. The Polish counterpart is the receiver [syndyk] (Gurgul, 2016, p. 800). So in this case, the legislator first of all requires the insolvent debtor to be bailed out, and only when this proves impossible, to be put into liquidation. Furthermore, such proceedings are exclusively in the jurisdiction of a foreign court, which in this case may be a court or public authority authorised to conduct or supervise foreign insolvency proceedings, as expressly mentioned in the provisions of Art. 379 point 5 of the IL.

As a rule, we can distinguish two types of international insolvency proceedings (Kłyta, 2014, p. 828). The first (the main proceedings) involves a situation in which an insolvent debtor has assets located in two different countries,

and the proceedings may be initiated in two separate ways. This may result from a variety of legal regulations in force on their territory, where the evidence may provide a range of indications as to the scope for filing for insolvency. However, irrespective of this, after their fulfilment, a declaration of insolvency will be possible on the condition that the business headquarters or registered office are in their territory. Increasingly, however, entrepreneurs also do business outside of the country where their headquarters are located, either in the form of a subsidiary or a branch. Hence, in such cases, both main and territorial insolvency proceedings may occur. The basis for this interpretation of the main foreign insolvency proceedings is essentially the content of Art. 379 point 2 of the IL. In this case, we will be dealing with the concept of the 'debtor's main centre of interests', which in its fundamental wording corresponds to what has been previously stated. On the other hand, this issue is regulated in a slightly different way in the Regulation of the European Parliament and the Council 2015/848, which uses the terms territory, on which 'the centre of the debtor's main interests is situated' (Art. 3 Sections 1, 2 and 4 (a)). Doubts may therefore arise as to whether it would not be appropriate to apply foreign law in such circumstances. In this respect, however, the provisions of Art. 1143 of the Code of Civil Procedure (hereinafter referred to as the CCP), make it clear that the court ex officio determines and applies the provisions of foreign law, if they are indeed applicable (Pazdan, 2017, p. 113). The IL is unambiguous in this respect, giving a clear indication as to the scope of this legal regulation in the territory of the Republic of Poland.

The second type of proceedings (territorial) will apply to any other proceedings that cannot be considered as main proceedings and will also be carried out in the territory of another Member State only if the debtor has a branch in the territory of that State. The proceedings in this respect are clearly set out in Art. 3.2 of the Regulation No. 2015/848 of the European Parliament and of the Council and refer to the 'establishment' of the debtor. Furthermore, Art. 379.3 of the IL states that territorial proceedings will also apply in cases where the debtor has its place of residence or property in a country other than that where the company's head office is located (Filipiak, 2011, p. 71).

The international insolvency procedure also assumes that Member States will respect each other's legal settlements. This assumption is designed to speed up their duration, which is important in cases when an insolvent entity's assets are in separate states. In the provisions of the IL, such recognition is made by the court in the form of a decision on the recognition of foreign insolvency proceedings. This situation means that insolvency proceedings initiated earlier in another country extend also to Poland. Thanks to this legal structure, the foreign court, whose role is to liquidate the assets of the bankrupt entity, or the administrator appointed by them to manage or supervise such assets, will be also able to act effectively in Poland (Zedler, 2016, p. 249). Art. 392 of the IL clearly indicates that not only the decision on insolvency proceedings is subject to recognition, but also the announcement of its commencement. Also of note is that the basis for refusal to recognise the foreign court's decision on insolvency cannot be the premise of non-reciprocity (Gurgul, 2016, p. 810).

Since a foreign court's decision on insolvency is recognised, this may lead to negative consequences in Poland, especially if there is an intention to initiate insolvency proceedings against an entity which has already had foreign insolvency proceedings filed against it. It is thus impossible to institute such proceedings also in cases where the conditions of their initiation would be expressly provided for in the IL and the Polish court would have the power to initiate such proceedings.

However, the situation is slightly different where the main foreign insolvency proceedings are first initiated in a Polish court. In this case, it is clear that it is therefore possible to initiate secondary insolvency proceedings. This

solution is in accordance with the model law regulations of UNICITRAL, which assumes that in the event that foreign insolvency proceedings are recognised in Poland as the main insolvency proceedings, the entity may also initiate secondary proceedings aiming at the liquidation of its property. A special feature of this type of proceedings is also that the court, when initiating secondary proceedings, is not obliged to verify whether the conditions for declaring the insolvency of the entity are fulfilled, as is the case for proceedings initiated against debtors with their headquarters and assets in Poland. This situation is clearly described in Art. 405.1(1) of the IL, which states that recognition of the initiation of foreign proceedings does not prevent the court of law from initiating insolvency proceedings. However, if the decision on initiating the main foreign insolvency proceeding has been taken, insolvency proceedings instigated in Poland are secondary insolvency proceedings. However, Art. 406.1 of the IL, in turn, establishes a different rule, although referring to secondary proceedings; namely, that secondary insolvency proceedings also apply to those insolvency proceedings initiated before recognition of the decision to open insolvency proceedings if the Polish court considers foreign insolvency proceedings to be the main procedure. It is extremely important to note that this change was made simultaneously with the recognition of the decision on the opening of foreign insolvency proceedings, due to its immediate enforceability (Gurgul, 2016, p. 821). What is significant in this case is that both domestic and European legislators have adopted a flexible formula for this kind of proceedings, giving the option to act quickly and effectively, depending on the circumstances, in order to properly and effectively secure the creditor's claims in the ongoing insolvency proceedings.

Method

This work is based on a study of the literature as well as source materials in the form of the provisions of Polish insolvency legislation along with EU Regulation No. 2015/848. In addition, in the context of international insolvency law, the regulations of the Polish Private International Law Act as well as the provisions of the Code of Civil Procedure were analysed.

Results

From the assumptions and objectives used in this work, it can be concluded that the legal solutions adopted constitute an adequate and appropriate response by legislators who, in establishing appropriate insolvency procedures, have created legal tools to ensure adequate cooperation between individual Member States in the conduct of international insolvency proceedings. In addition, it was found that the model adopted for conducting such transactions prevents double claims against the same debtor in a situation where the creditors will want to act against them. This is precisely the purpose of secondary proceedings, which is intended to balance the obligations of both parties to the proceedings.

Results supply

Creating a systemic model of insolvency proceedings not only in Poland but also in other EU Member States, and which in some situations even affects the legal regulations of countries outside of the EU, promotes economic security.

Results demand

The insolvency law framework gives creditors the opportunity to effectively settle their claims, thus protecting them from dishonest debtors who, wishing to avoid the legal responsibilities of insolvency, might attempt to hide their or their own assets abroad, hoping that the existing rules would facilitate such action.

Limitations

Conducting insolvency proceedings has its limitations, regardless of the established, efficiently operating procedures that are international insolvency proceedings. A barrier to its effective implementation will be the issue of reporting claims, which assumes in Art. 54 of Regulation 2015/848 of the European Parliament and of the Council that immediately after the institution of proceedings in a Member State, each judicial authority or designated administrator is obliged to notify all creditors, including those from abroad. However, this applies only to those who are known, while others may submit their claims in any form. We should consider a limitation, which in this regard concerns the time in which they can do so. After its expiration, the claim against the debtor can not be effectively asserted.

Conclusions

The creation of an institution for international insolvency law procedure and the adoption of a new Regulation of the European Parliament and the Council No. 2015/848, replacing the existing Regulation 1346/2000 on insolvency proceedings, combined with amendments to national provisions of the Law on Insolvency, has clearly contributed to the creation of a thorough procedure for claims in insolvency proceedings, thus giving a real tool not only to creditors, but also to insolvent debtors for protecting their rights. These regulations, however, have shortcomings, such as the issue of reporting claims and deadlines before which this should be done. However, from the point of view of the principle of legal certainty, such a solution should be welcomed, since its absence could result in multiple requests for claims against the debtor. As a result, the proceedings could be extended indefinitely and this would lead to a significant increase in costs.

Acknowledgments

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PSYCHICAL DISTANCE IN THE INTERNATIONALISATION PROCESS OF MICRO AND SMALL ENTERPRISES

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ABSTRACT

Despite the development of new technologies and "flattening of the world", psychical distance is a relevant factor in the internationalisation process of micro and small enterprises. This article indicates the importance of psychical distance in the internationalisation process of activities performed by companies of the SME sector, with particular focus put on micro and small enterprises. The multidimensional nature of the concept of distance in the internationalisation process was presented using the CAGE model (*cultural, administrative, geographical, economic*). The article discusses the concept of psychical distance and stage internationalisation theory in the context of the fundamental Uppsala model. Moreover, the article indicates risk categories of international operations and its impact on the scale of psychical distance in the internationalization of activities.

Introduction

The internationalisation of company's business activities may be identified as the phenomenon of structural transformation of the world economy. Thanks to the technological progress and and fierce competitiveness, the form of company's activities is changing from simple trade of manufactured goods and services on the local market

to the internationalisation of all the company's undertakings. This applies to not only big enterprises, but more and more often to micro and small companies as well.

The concept of distance and the related assumptions, stating that location can affect the character of business transactions, constitute the basis of the theory of foreign trade and international undertakings. In the *gravity models* of international trade, which are built on a macro-scale, the key variable determining the value of trade between two countries is the geographical distance (Ciszewska-Mlinaric, Wąsowska, 2012, pp. 3–22). Whereas, the theories concerning internationalisation of companies developed on a micro-scale are based on the assumption that an obstacle to internationalisation is the foreignness of a market where foreign expansion takes place, and the resulting additional costs of doing business abroad (related to e.g. lack of familiarity with the market, language barriers, lack of orientation in the political and legal system).

The aim of the article is to identify the importance of psychical distance in multidimensional typology of distance in the internationalization of a company, as well as its importance in the process of internationalization of micro and small enterprises.

The importance of distance as an obstacle to internationalization

The importance of distance in the context of limiting internationalization of enterprises and their development on foreign markets can be analysed in two ways.

On the one hand, the development of new forms of transport and communications technology improves international integration process and reduces the significance of distance as a barrier hindering this process. The promotion of the Internet (which disregards location) diminishes the importance of internationalization analysis as a process of "overcoming distance" (Hamill, 1997). Furthermore, there are also "forces" that have an impact on shortening the distance and "flattening of the world", with some of them being:

- the Internet,
- changes in value chain configuration e.g. *outsourcing, offshoring, supply-chaining* (building a competitive advantage based on a fast and reliable supply chain),
- workflow management technologies.

On the other hand, entrepreneurs tend to overestimate the attractiveness of foreign markets. In this case, the claim that psychical distance is becoming of a lesser importance in internationalization process is premature, especially with regard to micro and small enterprises. Underestimating the role of psychical distance may lead to wrong decisions of entrepreneurs (managers), e.g. the choice of the wrong market, inappropriate way of entering a foreign market, or mismatched development strategy on a foreign market.

It is also worth noting that the CPA analysis, which is based on the level of GDP and inclination for consumption, and which determines absorption capacity of the given market, does not take into consideration the aspects of cultural and administrative distance of market access for a particular company, which are important elements of psychical distance of internationalization.

Multidimensionality of distance in internationalization. The concept of psychical distance.

The first multidimensional typology of distance, known in the literature as the CAGE model, was formulated by Ghemawat (Ghemawat, 2001, pp. 137–147). The name of the model is an acronym of words cultural, administrative, geographic and economic. Berry, Guillen and Zhou (2010, pp. 1460–1680) extended Ghemawat's typology with five

additional dimensions: financial (the development level of financial markets), political (political stability, democracy level), demographic (demographic structure of society), communication (tourism and access to the Internet) and knowledge-related (patents and level of scientific knowledge). Due to the fact that three of these dimensions can be treated as a more detailed typology of Ghemawat (financial and knowledge-related versus economic; political versus administrative) (Ciszewska-Mlinaric, Wąsowska, 2012, p. 6), and the other two (demographic and communication) were only marginally used in empirical works (Berry, Guillen, Zhou, 2010, pp. 1460–1680), four basic distance dimensions are discussed below (Table 1),

Table 1. Multidimensionality of distance in internationalization (a reference to the CAGE model – *cultural, administrative, geographical, economic*)

Distance dimension	Elements	PSYCHICAL DISTANCE = the resultant of distances in the CAGE model
Cultural distance	different languages, national groups, religions, social norms, lack of trust differences in relation to power, individualism and the importance of work and family	
Administrative distance	no participation in the economic community, lack of a single currency, political hostility differences regarding the regulatory, cognitive and normative area	
Geographical distance	distance, no common border, different time zones, climatic differences the great-circle distance (shortest distance) between geographic centers of countries	
Economic distance	differences in the income of residents differences in costs and quality: natural resources, financial resources, human resources, infrastructure, intermediate raw materials, knowledge and information differences in the level of economic development and macroeconomic indicators	

Source: own work based on: Ciszewska-Mlinaric, Wąsowska (2012).

Psychical distance differs from cultural distance, despite the fact that in many empirical papers these terms are used interchangeably. Psychical distance is the resultant of four distances included in the CAGE model.

Psychical distance, contrary to cultural distance, which concerns differences between countries as understood by managers, regards perception, i.e. phenomena occurring in the mind of an individual person. Therefore, psychical distance should not be subject to operationalization by means of "objective" factors (level of education, language or level of GDP per capita) (Ciszewska-Mlinaric, Wąsowska, 2012).

Furthermore, according to the Uppsala school, psychical distance concerns many dimensions of differences between countries, such as language, culture, political system, level of education and the degree of industrial development (Daszkiewicz, 2016, pp. 23–24).

The concept of psychical distance (Figure 1) is closely related to the staged theory of internationalization of enterprises and is the foundation of the Uppsala model (U-Model) (Daszkiewicz, 2016).

This model was developed by Swedish researchers J. Johanson and J.E. Vahlne (1977) with the participation of F. Wiedersheim-Paul, and was based on the observation of behaviour of Swedish enterprises on international markets in the mid-1970s. It could be assumed that the stage model reflects internationalization of micro and small enterprises, which most often start internationalization from *ad hoc* export, and then develop their activities by "baby steps" (implementing further forms of internationalization in countries with an increasing psychical distance).

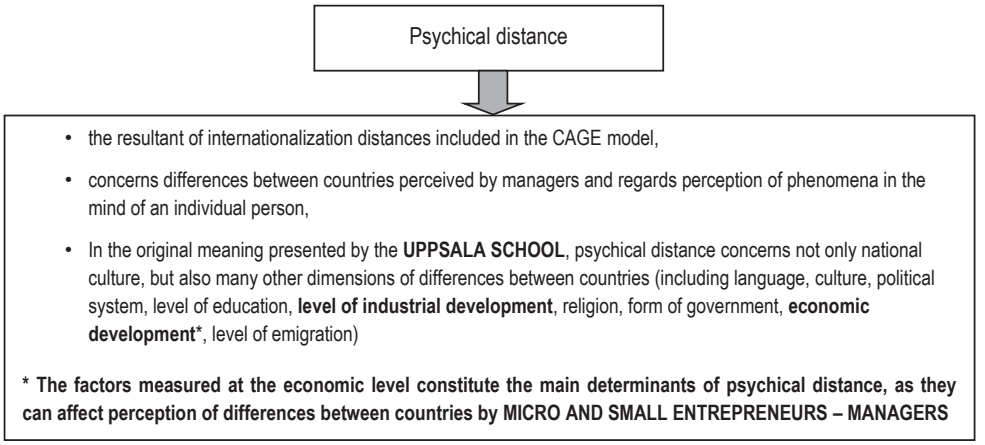


Figure 1. The concept of psychical distance

Source: own work.

The internationalization process in this model is understood as the interaction between the development of knowledge concerning foreign markets and activities, and the growing involvement of resources.

The risk of internationalization

The level of risk in internationalized activity of an enterprise is incomparably higher than in the case of activity on the domestic market, which results mainly from the greater number of factors affecting the company's operations, which are difficult to recognize and predict.

Depending on the applied form of internationalization and "psychical distance" between the country of origin of the company and the country of planned expansion, the changes in company's organization may be of a different character and intensity. This results in the increase in the risk level concerning the company's activities. Figure 2 presents the types of risk in the internationalization process.

In the case of enterprises operating on foreign markets, it becomes important that manufacturing and financial processes take place most often across borders, which means that economic activity is performed in various countries, and that payment streams related to them are made in different currencies.

Due to the complex correlation of manufacturing and finance processes, financial management in an enterprise operating on the foreign market contributes to the creation of many tasks that are not found in the finances of enterprises operating exclusively on the home market. Reference can be made to e.g. the increased necessity to fund raise (in enterprises operating on international markets there is a greater demand for capital, while at the same time internationalized enterprises have increased access to financial markets), preserving autonomy when making strategic decisions, or risk management in the scope of exchange rates, capital costs and country risk.

The risk of company's international business activity constitutes an uncertainty function that results from the openness of the company and its coexistence in the global environments. In case of micro and small enterprises that operate on a local scale, it is sufficient to recognize chances and threats determined by the micro/sector

environment and macro environment. Whereas, in the case of internationalization process of business activity started by micro and small enterprises, it is necessary to systematically monitor the global environment.

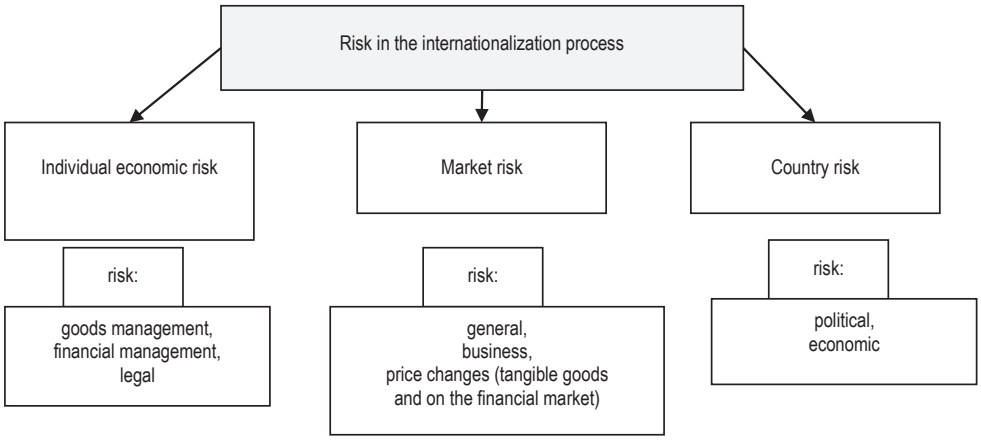


Figure 2. Risk in the internationalization process

Source: own work based on Bielawska (2004).

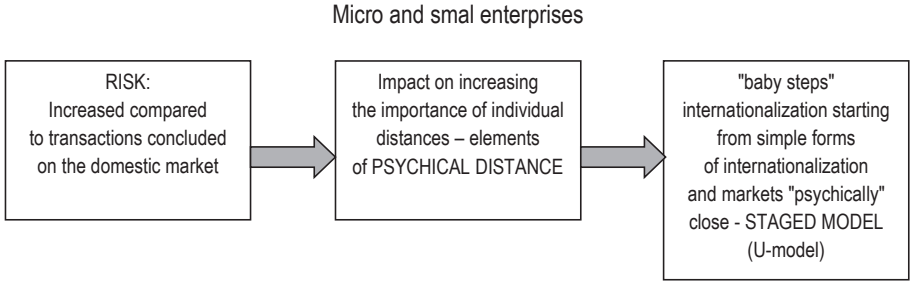


Figure 3. Relation: internationalisation risk – psychical distance – U-model

Source: own work.

The increased internationalization business risk contributes to the increase in individual internationalization distances that are elements of psychical distance, which in turn leads to internationalization of micro and small companies' business activities with the use of simple internationalization tools (e.g. export) and by entering markets with small psychical distance (Figure 3).

Conclusions

Psychical distance, despite the development of new technologies and "flattening of the world", is of a significant importance in the internationalization process of small enterprises. The distance discussed is multidimensional and

comprises cultural, administrative, geographical and economic distances. The fundamental element of psychical distance is the distance at an economic level, as it affects the micro and small entrepreneur-managers' perception of differences between countries.

If compared to transactions concluded on the domestic market, the risk in the internationalization process is higher, and thus increases individual internationalization distances constituting the elements of psychical distance. The above-mentioned risk encourages the smallest companies to internationalize their business by taking baby steps using simple forms of internationalization (e.g. export) and entering markets that are psychically close to their home country.

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EUROPEAN INVESTMENT BANK AS A SUPPORTER OF EUROPEAN PPPS

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KEYWORDS European Investment Bank, public-private partnership, loan, infrastructure project

ABSTRACT

The aim of a paper is to examine EIB activities in financing, advising and promotion of PPPs in EU member countries. Research is based on data gained from published by EIB materials and statistics. PPPs are much more complicated in legal, social, political, economical sides than projects conducted traditionally by public sector. Moreover high level of capital intensity of infrastructure assets is a stumbling block to gather the whole amounts to cover investments, mainly in form of loans. Banks become one of the main partners, and at the same time decision makers in PPP projects. A high level of risks in PPP projects combined with high level of capital intensity eliminates small, local banks leaving in the field big commercial banks and multilateral institutions, like as World Bank Group, Asian Development Bank, or in Europe European Bank of Reconstruction and Development and European Investment Bank (EIB). EIB is both a bank and a public institution. Together with loans EIB also offers advisory and technical assistance which can help projects to maximise value for money. As a unique financial institution EIB plays a catalytic role in promoting sound and important projects towards EU policy. The main task of EIB is to contribute towards the integration, balanced development and economic and social cohesion of EU Member States. EIB plays very crucial role in PPP development in EU, specially in countries with not very sophisticated financial markets. It seems that EIB is the biggest supplier of funds to finance PPP in European market.

Introduction

Public-private partnership (PPP) has been known for centuries, but nowadays there is noticed a renaissance of such activities. The main engine of PPPs development is a scarcity of funds on state budget levels parallel to still increasing investment needs in infrastructure as a result of forceful technical and technological progress all over the world and increase of people expectations of adequate quality of provided public services.

PPPs are much more complicated in legal, social, political, economical sides than projects conducted traditionally by public sector. Moreover high level of capital intensity of infrastructure assets is a stumbling block to gather the whole amounts to cover investments, mainly in form of loans. Banks become one of the main partners, and at the same time decision makers in PPP projects. A high level of risks in PPP projects combined with high level of capital intensity eliminates small, local banks leaving in the field big commercial banks and multilateral institutions, like as World Bank Group, Asian Development Bank, or in Europe European Bank of Reconstruction and Development and European Investment Bank (EIB).

The aim of a paper is to examine EIB activities in financing, advising and promotion of PPPs in EU member countries. Research is based on secondary data gained from published by EIB materials and statistics.

Overview of EIB activity

European Investment Bank (EIB) was established in 1958 in force of Treaty of Rome and the same it is the world's oldest regional multilateral development bank and the largest lending institution by volume (Xianbai, 2017, p. 263). It has a mandate to operate as a European Union bank, supporting investments within EU and beyond in the interest of the 28 nations block.

As a unique financial institution EIB plays a catalytic role in promoting sound and important projects towards EU policy. The main task of EIB is to contribute towards the integration, balanced development and economic and social cohesion of EU Member States. The Bank reports to its Board of Governors, made up of a Government Minister from each Member State, usually the Minister of Finance.

At the beginning of its activity EIB financed projects from obligatory payments of Member States (Honohan, 1995, p. 318). This situation has been changing for years. At present EIB finances itself by borrowing on the international capital markets rather than drawing on the budgetary resources of Member States. The Bank raises substantial volumes of funds on the capital markets – about EUR 55 billion annually in recent years – which it lends on favourable and long- term conditions to large - scale capital projects (Investment, 2018). It operates in keeping with strict banking practice and in close collaboration with the wider banking community, both when borrowing on the capital markets and when financing projects (Tujinman, 2009).

EIB is both a bank and a public institution (Investment, 2018). As a bank EIB gains money from international capital markets with its AAA credit rating note. As a public institution – as a representative of 28 member countries – destines collected funds to finance investment projects with sustainable and growth potentials around four priority areas:

- strategic infrastructure,
- small and medium entities,
- climate action,
- innovation and skills.

All the projects in which EIB has been involved must be bankable and comply with strict economic, technical, environmental and social standards. EIB acts as non- profit institution granting loans and guarantees on investment projects (Table 1).

Table 1. Major products and services of EIB

Array of services and products provided by EIB	
Project loans	Sustainable energy
Inter-mediated loans	Infrastructure project advise
Structured finance	Urban development
Guarantees	Transport infrastructure
Project bonds	Public-private partnership
Venture capital	Risk sharing
Micro finance	Green- tech demonstration

Source: World (2015).

Together with loans EIB also offers advisory and technical assistance which can help projects to maximise value for money. Interest rates are equal for every borrower, despite of type of project, investment country and sector. Rates are based on EIB's own marginal cost of funds plus small spread (up to 2%) to cover administrative costs and withdrawals for reserve funds. The typical EIB loan is long term with maturity of between 7 and 12 years for industrial borrowers and up to 20 years for infrastructural projects and covers up to 50% investment costs (in infrastructure projects commonly up to 35%). EIB demands a submission of bank guarantees on construction risks and an acceptance of a project by investment side country. It should be underlined that EIB does not involve into capital market projects (Finanse, 2006).

The EIB does not pay dividends to its shareholders (Member States). The bank, despite of its non- profit nature, is a profit- making institution (Brzozowska, 2014). Profits have been retained over the years helping to build the capitals and reserves (Table 2).

Table 2. EIB own funds composition 2015–2016 (EUR million)

Composition	2015	2016
Capital	21,699	21,699
Reserves	38,867	41,624
Profits from financial year	2,757	2,857

Source: Financial (2016–2017).

Last years the profits were around EUR 3 billion (2015 – EUR 2757 million, 2016 – EUR 2857 million), that means level of 0.6 per cent of granted loans that time.

PPP development in Europe

The term Public- Private Partnership (PPP) has been commonly used since the early 90., however there is no any unique European model of a PPP (The EIB's, 2004). Simply, a public-private partnership means an arrangement between a public authority and a private partner designed to deliver a public infrastructure project and service under a long-term contract. Under this contract, the private partner bears significant risks and management responsibilities. The public authority makes performance-based payments to the private partner for the provision of the service (e.g. for the availability of a road) or grants the private partner a right to generate revenues from the

provision of the service (e.g. tolls from users of a bridge). The core objective for the public sector of PPP projects is to input private sector skills in supporting or improving public sector services. When properly prepared, PPP projects can provide significant benefits to the public sector as well as to the project users (PPPs, 2018). Such projects may engage private sector on new assets, or upgrading of existing ones. Typical examples of PPP projects are roads, airports, railways, bridges, tunnels, water treatment plants, schools, hospitals, government offices, sport facilities, or prisons.

PPPs, combining private and public sector resources, play an important and still increasing role in infrastructure development in Europe (Figure 1).

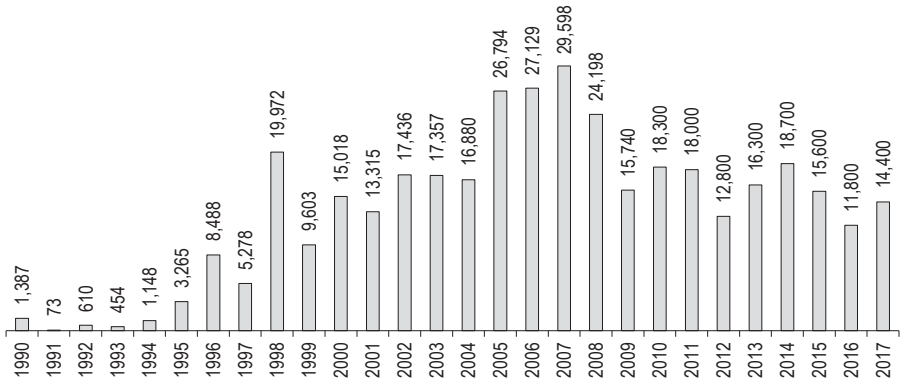


Figure 1. Value of PPP projects in EU (euro million)

Source: by own based on Market (2010–2017).

In past PPPs in Europe have had periods of decreasing and periods of increasing. Till 1998 a progress in PPPs projects was rather poor (in project values), then a sharp almost three- fold increase has been noticed. The best years of PPPs activity in European project market were 2005–2007, then as a result of financial crunch this activity was fallen to the value of 2002–2004. It should be underlined that the last years were not very fruitful for PPPs projects.

Geographically the PPP market has been concentrated around the United Kingdom as a first mover and absolute leader in PPPs applications in various sectors (the UK PPP market represents around 25% of the overall EU PPP market). After a leader Portugal, Spain, Greece, the Netherlands, Denmark followed, and France, Italy and Germany have joined as an important players lately.

Most countries commenced PPPs in transport sector (roads and motorways, tunnels and bridges, airports) which is still the main sector of PPP applications, but a share of water treatment, power transmission and distribution, urban development, and social infrastructure (mainly in health and education) becomes more and more notable.

EIB involvement into PPPs financing

The EIB's involvement into PPPs covers all types of transactions like as design–build–finance– operate, build–finance–maintain, design–finance–operate, build–operate–transfer, concession arrangements, provision

of public services and a risk sharing between public and private sector regardless of the type of financing provided by EIB (project finance, sovereign lending). The loan portfolio contains amounts of loan commitments on date of signature loan agreements signed for big PPP projects without small PPP projects and investments into equity funds (Figure 2).

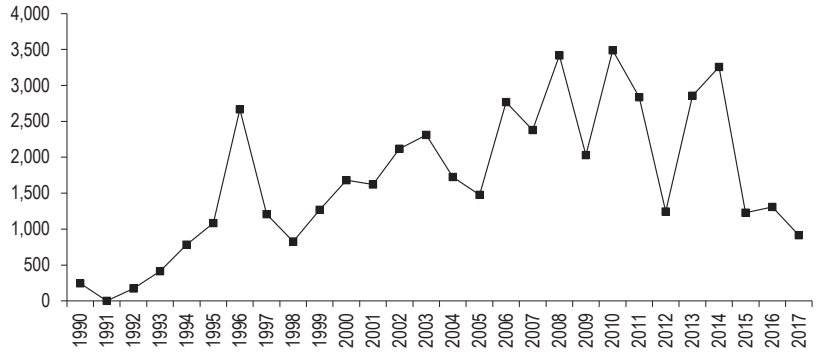


Figure 2. Amounts of EIB's financial support (loans) to PPPs in EU countries (EUR million)

Source: by own based on PPPs (2018), pp. 1–21.

Almost 30 years of EBI involvement into PPP projects has been distinguished by very variable curve. Only at the beginning till 1996 the progress in amounts of granted by EIB loans grew year to year, and later the situation has been changing dramatically up- down each year.

Table 3. The biggest engagements if EIB in PPP projects in Europe

Country	PPP Project	Amount of EIB loans (EUR million)	Sector	Year
Denmark	Great Belt Link 3	784	transport	1994
Denmark	Great Belt Link 4	1,069	transport	1996
Greece	New Athens International Airport	999	transport	1996
Denmark	Oerosund Link 2	1,088	transport	1997
United Kingdom	London Underground	1,349	transport	2002
Poland	A1 Motorway: Nowe Marzy – Toruń	575	transport	2008
Sweden	New Karolinska University Hospital	699	transport	2010
France	LGV Sud Europe Atlantique	1,186	transport	2011
France	LGV Bretagne –Pays de la Loire	638	transport	2011
Italy	Autostrada BreBeMi	700	transport	2013
Italy	Milan Eastern Ring Road	700	transport	2014

Source: PPPs (2018), pp. 1–21.

Regarding to amounts of granted by EIB loans to PPPs its share in values of PPP projects also changed from more than 19% in 2010, through 17,5% in 2013 to 6,37% in 2017. Details are contained in Figure 3.

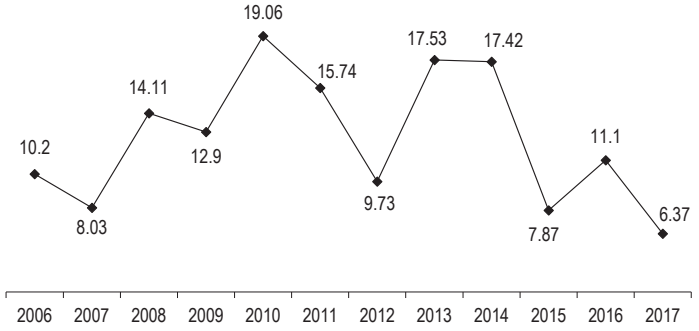


Figure 3. A share of EIB loans for PPP to PPP value (%)

Source: by own based on Market (2007–2018), PPPs (2018), pp. 1–12.

Like it was mentioned transport has been the main sector covered by PPP projects. Despite of relatively big value of transport projects differences among transport and other sectors are enormous (Figure 4). The other sectors co-financed by EIB's loans are: health, education, water treatment, waste management. The careful attention on transport projects is compatible with bank strategy setting its priorities mainly in transport investments.

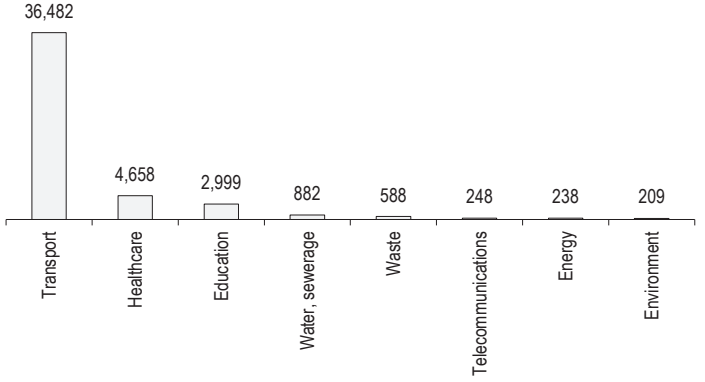


Figure 4. Sectoral PPPs financed by EIB's loans I total (EUR million)

Source: by own based on PPPs (2018), pp. 1–21.

Given EIB engagement in PPP projects by countries (Figure 5) in total (1990–2017) the biggest beneficiaries are projects located in: Portugal, Denmark, Poland, France, next group is: Greece, Germany, Italy and the Netherlands.

In sum, EIB plays very crucial role in PPP development in EU, specially in countries with not very sophisticated financial markets. It seems that EIB is the biggest supplier of funds to finance PPP. However activity of EIB in PPPs development is difficult to overestimate there is not very important in numbers or share. A contribution of loans for PPP is in frames of 0,2 to 1,2 % of whole EIB loan portfolio (Figure 6).

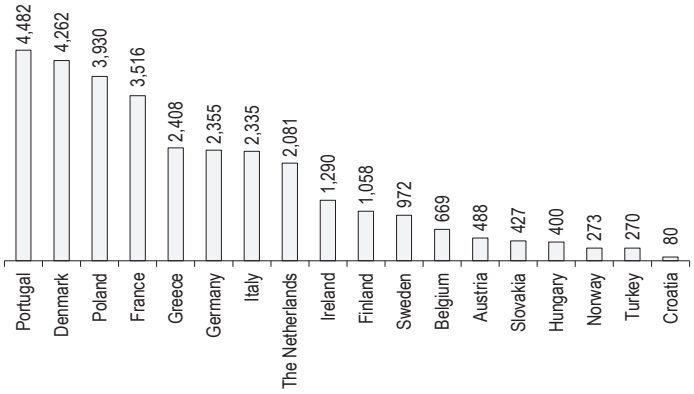


Figure 5. Geographical structure of EIB loans to PPP projects in total (EUR mln)

Source: by own based on PPPs (2018), pp. 1–21.

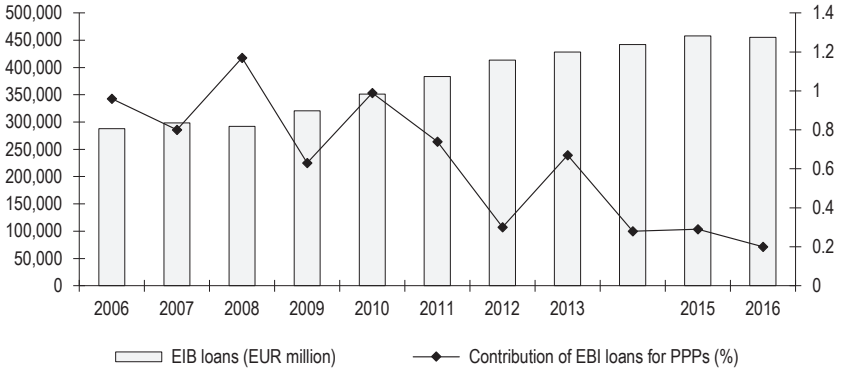


Figure 6. Loan portfolio of EIB in 2006–2016

Source: by own based on Financial (2007–2017), PPPs (2018), pp. 1–12.

A curve of a share loans for PPPs in Bank portfolio is still decreasing, which does no mean that EIB participation is becoming smaller and smaller. Real values of granted loans deny it. A curve shows only a internal structure of loan portfolio.

Conclusions

A research confirmed a leading role of European Investment Bank in providing financing to PPP projects in EU countries among other creditors. It should be underlined that:

1. An importance of EIB in PPP development in Europe is not possible to overestimate.
2. EIB acts as a lender for PPP projects and makes easier to find financial close.
3. EIB acts as a guarantor; EIB loan acts as a project surety.

4. Additional, more and more important, support of EIB is developing activity in advising and training provided by law, finance, technical and technological EIB expert team.

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SCHOOL DEVELOPMENT MANAGEMENT

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ABSTRACT

Contemporary school faces new challenges. One of them is cooperation with the environment, what should be consistent with the direction of school development. The aim of the article is to discuss the subject of organizational development – schools in the context of cooperation with the environment. The article presents partial research results, the aim of which was to determine the ways of using the school's resources for its development. Research hypotheses assumed, among others, relationship between the level of school development and the number and type of institutions from the environment with which the school cooperates. The research was conducted using two research methods: an interview and a survey. The presented research results are of cognitive nature.

Introduction

Widely understood development of the organization and undertaking cooperation with the environment become one of the key elements of the modern organization, especially the one that intends to compete effectively with other entities. Schools also fit in with these trends, moreover, Jan Szczepański wrote that "school is a very

complex, open system, in constant relations with the wider environment and can not exist without these contacts. For they are – if correct – they give direction and meaning to school work" (Szczepański, 1968, p. 38).

Therefore, the environment of the organization, or rather the school's cooperation with the environment may be one of the factors determining the level of school's adjustment to the needs of the labor market. With rapid development, determining the function of science. Speaking of life-long activities (Juśko, Wieczorek, 2016, p. 110):

- educational changes in their evaluation both in the local environment as well as in the national and European or even global,
- the state's educational policy (the process of reforming the education system, the quality of educational law),
- local environment (demography, condition of the local economy, social development strategy of local self-government, education market),
- people who create a school, their system of values and attitudes, qualifications and motivations,
- organizational and managerial skills at school, the leading body, access to financial resources, material resources.

All these factors have a significant impact on the development of the school, but what seems to be the most important is the human resources building the organization. Their role is huge, but research shows (Bednarska-Wnuk, 2011, pp. 126–127) that manners of human resources management require changes, because the tools used by school directors differ from the standards used by other employers.

The article is a theoretical and empirical. The article focuses on two issues: the human resources of the school, and more specifically their attitudes, involvement that contributes to the development of the school and the creation of cooperation between the school and its surroundings. The issue presented here was based on my own partial research.

School as an organization

The term „organization" means an institution, (...) or an organizing process, by which one understands the way of arranging and assigning work to members of an organization in order to be able to achieve its assumed goals efficiently" (Białasiewicz, 2008, p. 15). The school undoubtedly is an organization that has a long tradition, from which it derives good practices and experiences. Despite this, the school requires constant reforms (Szyszka, 2010, p. 272) allowing for better functioning and fulfilling its educational role. Aspects of a well-organized school and the criteria for its organizational evaluation are (Olejniczak, Pielachowski, 2004, p. 49):

a) area of ethical values as the basis for the social mission of the school – refining its own system of ethical values, the code;
b) quality area – high quality of services offered to each student – creation of a system by the school of quality assurance, testing and control of this quality as well as its measurement and evaluation;
c) the area of efficient management or making decisions – own, good rules and decision-making procedures, access to sources of necessary information, formal respect (in accordance with the law) of decisions made, knowledge of criteria and form of efficient operation;
d) area of cooperation with the local environment – cooperation, gaining support from citizens and environmental institutions;

e) development area – improvement of conditions for continuous development of the student, development and implementation of the school development program, motivating system, and modernization of infrastructure.

The abovementioned areas invoke in a direct or indirect way the aforementioned issues of the school's environment (item 4) as well as the development of the school focused on the development of the child on the one hand, and on the development of the teacher on the other (point 5). Both saved points and others are interrelated and create synergy. Capacity building is largely based on cooperation with the environment undertaken by teachers. All the previously indicated criteria are created to a different extent by drawing on the experience and resources of the organization that constitute the school's environment. However, it is important that the relationships with the environment are effective for the school as an organization and its human resources – students and teachers.

Methodology of research

The presented research results are part of a wider study, the main theme of which was the management of the school as an organization. The research process focused on the resources of the school, how to acquire and use them. In the research work, answers to two key research questions were sought: how are the school's resources as an organization built? and how are they used to build internal and external relations of the organization? At the same time, a diagnosis was made regarding the directions of school development based on on undertaken participation in educational projects, as well as joint activities with school environment institutions. The research was carried out in 30 primary and secondary schools of the Gdańsk poviat. The research was carried out using two research tools: an interview questionnaire and a questionnaire. In the period from June 2017. until November 2017. the questionnaire was completed by 120 teachers, including representatives of the management. Interviews were conducted with 30 teachers. As part of the research, a thorough analysis of 10 schools was carried out. Selected areas of analysis and its results in relation to secondary school will be presented below.

Case study

The secondary school was established at the beginning of the 20th century as a result of the efforts of academic teachers. It has a cultivated tradition and is one of the most prestigious high schools. The school employs 94 teachers, including teachers with a professor's degree. In the research community, it is one of the most prominent schools. In the Perspectives rankings, it is in the first hundred, while in the Pomeranian Voivodship it is in the first 10 (Jubileuszowa…, 2018). The results of surveys and interviews supported, among others, an analysis of strengths and weaknesses is presented in Table 1. The results show a paradox that the team of the teaching staff noticed. The variety of activities undertaken at school is on the one hand regarded as a strong side that "attracts" candidates to school, but is also perceived as a weakness and a threat. Attention is drawn to the fact that every opportunity is used that seems interesting from the point of view of school functioning. This, however, distracts and does not focus on the directions important from the point of view of the school. Anyway, it was pointed out that the weakness of the school is the lack of a leading thematic area. Thus, the school does not specialize in a specific field and area. What's more, it does not go according to the trends and needs of the labor market, which is reflected in the lack of any offer developing technical skills and enriching knowledge in the areas of mathematics, computer science and physics. This is what teachers themselves pay attention to, parents confirm – all members of the parents' council notice the necessity to prepare an offer developing technical skills.

It is worth emphasizing that the participants of the research, the chances for the development of the school, see in cooperation with the school's environment, in a special way with entrepreneurs. However, when asked about specific profiles of employers, they claimed, first of all, that it does not matter (89% of respondents at school), it is important to show that the school has close contact with employers. Previous activities undertaken jointly with entrepreneurs concerned co-financing for student trips and organized events of various types at school (70%), awarding prizes in competitions (54%). Unfortunately, none of the teachers said about additional subject activities, or classes developing social competences or entrepreneurship, so desirable today (Strategie…, 2015), participation in the development of classes or teaching programm. This shows that despite the existing cooperation with the environment, the school does not fully use the resources of the environment. An additional contribution to this is the lack of a career counselor at school, whose presence could be a kind of link between the labor market – the natural environment and the decisions taken at school. Current information on trends that take place on the labor market and the reaction of universities and other high schools may constitute a valuable source of knowledge affecting the school's activities. The reason why the school does not show interest in this subject, despite the fact that teachers (91%) say that they know and observe the situation on the labor market, is the interest in learning at the school of future students. Every year, the school notes that 2–3 candidates apply for one place at school. It is not motivating to undertake, through the pedagogical group, broader activities updating the school's offer, and thus contributing to the school's development.

Table 1. SWOT analysis

Strengths	Weaknesses
– good team, – team involved, – variety of activities, – very good position in the city, – openness to new ones, – high competences of the staff, – the best students apply for a place at school	– no gymnasium, – variety of activities, – no leading thematic area, – communication of the pedagogical team, – lack of sufficient psychological and pedagogical support, – the so-called. school clearance, – lack of career counseling, – lack of legal support, – the quantity does not equal the quality
Opportunities	**Threats**
– perspective for development, – reform of education, – the possibility of developing technical majors, – involvement of students and parents, – EU and national projects, – inflow of new people to the school team, – cooperation with the environment, – cooperation with local business, – support for the organizational unit – the city council, – Research Institute in Education	– victims of their own success, – reform of education, – routine and laurels, – market trends, – conflict of interest

Source: own study based on workshops with teachers.

The presented sleep is not conducive to the development of the school, the surroundings and the school's clients are not a stimulus for purposeful actions and reflection on the direction of the school's development. Teachers see the reasons for the fragmentation of undertaken initiatives and their dissipation in the overloaded program and

it is difficult to do something additional (48%), sometimes they carry out additional activities, but this is because I do not want to get away from others (33%), not an initiator of activities there are students who sometimes come with something (15%). There were also such statements: I am carrying out additional classes – I encourage students to participate in competitions or programs, projects, if they take the initiative, I also have to prepare myself for them and do something more than I have done so far (21%). Teachers say they do not have time to develop their own, because the school is not working well, and it is known that „the fish is spoiled from the head" (30%). As areas for improvement, they indicated the quality of the school team's work:

- timely and correct completion of school documentation (30%),
- elaboration of procedures and standards for the school's operation (preparation of document templates) (32%),
- planning activities in advance (student outputs, organized events at school) (23%),
- delegation of tasks by the school management (15%),
- raising the professional qualifications of all employees and using the knowledge and skills acquired (17%),
- use of all communication channels (56%).

The answers presented above focus primarily on the organization of the school. Issues related to the timeliness of the work performed or the enforcement of the acquired knowledge on training and meetings remains at the discretion of the school head. However, it is the teacher's responsibility to introduce new tools and areas of student development. Here, they see the need to improve the functioning of the educational and educational areas of the school by:

- improving safety at school (78%),
- maintaining a high level of the results of the secondary school-leaving examination (69%),
- establishment of a school scientific/educational council (40%),
- providing classes in the field of vocational counseling (38%),
- extending the school's offer to mathematics and IT (18%).

Teachers at school do not indicate their attitudes and their commitment to school development. Both earlier, when they addressed organizational issues, as well as focusing on educational and upbringing issues, they focus on general school matters. They also do not indicate their role in the process of improving the school's offer, on the contrary they focus on their subjects and are not in favor of increasing the number of hours of subjects they do not teach.

The area of cooperation between the school and the surroundings is very rich (Table 2). The school cooperates with universities, other schools in the country and abroad. He undertakes charity activities that arouse students' sensitivity. Analyzing all the institutions that were indicated, it can be said that these are institutions and organizations that are rather common in cooperation with schools. Therefore, these are not special activities and relationships that make it possible to distinguish a school from other schools.

Teachers asked about what would foster school development were unable to indicate the answer. The question was difficult for them or they did not want to indicate answers so as not to bear the consequences of the answer given in the future, if the solutions proposed in the result were implemented. It is worth emphasizing that when asked about financial resources for training, teachers did not have any objections. The school management, in turn, claimed that the funds are not used because teachers do not report the need to raise their qualifications. Most often, financial resources are earmarked for group training of pedagogical councils. The level of motivation is

Table 2. Areas of school's cooperation with the environment and activities conducive to cooperation

Cooperation with the environment.	Activities conducive to development
– universities: university, polytechnic, WSE, WSH, WSPS, – schools from Great Britain, – travel agencies, – Regional Examination Commission, – Noble Package, – animal shelter, – counsel parents, – House of Culture, – police, – Municipal Police, – Polish-German Youth Cooperation, – Embassy of Spain, – Institute for Research on Education, – District Chamber of Legal Advisers	– good contacts at different levels of the student-teacher-teacher-teacher-school management relationship, – work in subject teams, – the involvement of people in various types of charitable activities at school, – cooperation with the Parents Council, – praise and prizes for participation in training and developing workshops.

Source: own study based on workshops with teachers.

low among teachers, and the proposed tools that the director has at his disposal are not enough. The attitude that characterizes most of the pedagogical group (76%) can be described as „having peace of mind." Asked about the forms of motivation that would help to encourage teachers to work almost unanimously said that the funds (89%). The others did not have the opinion (4%). Only a few people pointed out (7%) pointed to non-financial motivators of co-financing for sports cards, co-financing for cultural events, equipment with personal equipment (telephone, laptop).

Conclusions

Schools like any organization require development, especially since its main task is to educate young generations and prepare them for adult life. The article presented a small fragment of the school's research results, which is perceived in its environment as one of the prestigious schools. What the research results show, as an organization requires changes, because it seems to go on the so-called „Wave" of good opinion developed in earlier years. However, the way it functions, its participants' approach and tools in the hands of the management team need to be verified.

First of all, the directions of the school's development should be verified and clearly set up, and discussed with the members to gain the consent of all participants in the organization. Second, prepare a plan for introducing strategic actions indicating the next steps and tasks to be performed at all levels of cooperation with the environment and organization. It is worth deciding on the essence of the relations being undertaken and the consequences of this cooperation. Strengthening cooperation in a given field with specific expectations of all parties has a chance to be perceived as a benefit for all parties of the school and institutions from its environment. In addition, relationships can take on the nature of longer cooperation, and thus the brand and identification of mutual needs and expectations in the wider scope of education and the labor market.

Undoubtedly, activities that activate the environment, but above all, the members of the organization must be secured by their conviction about the legitimacy of the actions taken. This is a difficult undertaking due to the long-term nature of the enterprise. This in turn convinces us that the incentive system needs to be supplemented with tools commonly used in the business sphere. This has financial implications, which means that another research

question should be posed about the role of a public school as an evolving organization that effectively shapes its relations with the environment. To what extent should it be based on subsidies, and how much should it be a self-financing unit. How much is it able to implement solutions characteristic of a developing organization.

This article and research do not exhaust the topic, on the contrary they arouse reflection, which can be satisfied by continuing the research process.

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THE SECURITY OF PERSONAL DATA PROTECTION IN THE POLISH INFORMATION SOCIETY – SELECTED ASPECTS

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ABSTRACT

The European Parliament and Council Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data will come in force from 25 May 2018. The Regulation provides for many changes that must be implemented by the Polish legislator. It also sets out new responsibilities and tasks for data administrators. The GDPR (RODO) introduces greater protection of personal data than hitherto. The aim of the article is to present the most important changes resulting from the implementation of the GDPR. Increasing the knowledge about the protection of personal data is the responsibility of every entity, entrepreneur, manager and employee. The following research methods were used in the article: method of critical analysis of literature, logical inference method, method of analysis and synthesis. First, the article addressed the essence of data and information security. Next, it focused on the protection of personal data. Finally, changes in data protection were presented in connection with the new legal solution from the point of view of a member of society as well as of the organization.

Introduction

The European Parliament and Council Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data will come in force from 25 May 2018. The Regulation provides for many changes that must be implemented by the Polish legislator. It also sets out new responsibilities and tasks for data administrators. The GDPR (RODO) introduces

greater protection of personal data than hitherto. The aim of the article is to present the most important changes resulting from the implementation of the GDPR. The article presents the following research hypothesis – Increasing the knowledge about the protection of personal data is the responsibility of every entity, entrepreneur, manager and employee. First, the article addressed the essence of data and information security. Next, it focused on the protection of personal data. Finally, changes in data protection were presented in connection with the new legal solution from the point of view of a member of society as well as of the organization.

The essence of data and information security

The Internet is the driving force behind today's economy, creating opportunities and chances for business development worldwide. However, the importance of information security should be pointed out (Drab-Kurowska, 2013, p. 302). The importance of information security issues was already noted in 1999 by Sienkiewicz and Goban-Klas, who analyzed the scale of dangers related to the development of information technologies, telecommunications networks and digitization of life, relating to the conduct of information policy, information security management and protection of information resources strategic for the individual and the nation (Sienkiewicz, 1999).

Proper identification of threats is now the basis for determining the proper strategy not only of survival but also of the development of each organizational entity (Polończyk, 2017, p. 81). Information security is often defined as a state free of threats.

In another approach, it refers to all kinds of efforts that serve to protect the information possessed, important in the context of security, and thus affecting the smooth functioning of state structures and society. It also serves to provide information advantage by gaining new or more current data and by disinformation actions against possible opponents, which may be other entities (Madej, 2009, p. 1819). The broad definition of information security emphasizes the condition of internal and external circumstances that allow the state to have an information society that will survive and freely develop (Nowak, Nowak, 2011, p. 103). Information security is a broad concept, as it concerns not only the security of information itself in every form (including that which the entity itself is unaware of), but also the security of the systems in which it is generated, processed, stored and transmitted, the environment in which these systems operate, and the staff that uses these systems. It follows from this that information security includes the concept of security of information (data), which means protection of all forms of data exchange, storage and processing (Janczak, Nowak, 2013, p. 20). Besides, even the very concept of information is very broad and variously defined. More on this topic is written by M. Czaplewski (2012, p. 55).

When defining information security, a number of aspects are pointed out, above all confidentiality, authenticity, availability, integrity, accountability and reliability. Whitman and Mottord also point to privacy as one of the aspects that need protection due to the relationship with a given person (Whitman, Mottord, 2008). Personal information is information assets that have their own sensitivity, which is defined as the measure of importance assigned to the information by its author or trustee in order to indicate the need to protect it (Białas, 2007, p. 37).

Information security is the preservation of confidentiality, integrity and availability of information. According to the definitions in ISO/IEC 27000: 2014, confidentiality is the property meaning that information is not shared or disclosed to unauthorized persons, objects or processes; integrity is a property that ensures the accuracy and completeness of assets, and availability is the property of being available and usable at the request of an authorized entity (PN-ISO/IEC 27000: 2014).

Personal data protection

The European Union lacked transparency and certainty about the application of the law in this area. There was a need to create provisions guaranteeing an equivalent level of protection of personal data throughout the Union. If we add to this the question of the free flow of work, people or information (including personal data) that takes place in the EU, the need to regulate the protection of personal data has become evident.

In the Polish legal system, this issue is regulated by the Act of 29 August 1997 on the protection of personal data (Journal of Laws of 2016, item 922).

From 25 May 2018, Regulation 2016/679 of the European Parliament and of the Council (EU) of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and the repeal of Directive 95/46 / EC will come in force. (Journal of Laws 119, 4 May 2016). The Member States have the task in the abovementioned time to adapt their national provisions[1] to this legal act.

The intention of the representatives of the European Union was to modernize the regulations on the protection of personal data, which has been in force since 1995 and which in the era of progressing digitalization have less and less practical application. At the same time, the new law was created to be "technologically neutral", meaning up to date regardless of the development of technology or the emergence of new telecommunications products. This is due to the current dynamic development of the technique of information transmission technology.

This neutrality (or universality, as this attribute can be called) means that the EU regulation does not contain any specific guidelines on how to protect personal data. Because it is not enough that these guidelines would have to be different for each industry, it could soon be necessary to adapt them again to changing conditions.

Changes in data protection due to a new legal solution

Basic changes related to data protection are presented in Figure 1.

The obligation to apply the provisions on the protection of personal data will be required already at the design or page creation stage[2]. Apart from that, all entities will be able to collect personal data that is necessary for processing of an order, use of the website, service or application. This means that entities will not have the right to require any information that is not directly related to a given process.

Information obligation means that entities now are required to inform individuals that their personal data is being processed. In the newsletter communication, it will be necessary to provide full information about the very fact of data processing, the purpose of the processing and the data of the administrator, as well as about the recipients' rights. The companies will also be obliged to inform about the safeguards applied to personal data.

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[1] The laws related to information security in Poland include Act of 25 February 2016 on the re-use of public sector information Dz.U. 2016, item 352; Act of 6 September 2001 on access to public information, Dz.U. 2016, item 1764; Act of 30 August 2002 on proceedings before administrative courts. Dz.U. 2012, poz. 270; Act of 17 February 2005 on computerization of the activities of entities performing public tasks. Dz.U. 2014, poz. 1114 – amended in the scope of cooperation with the ePUAP system and interpretation of some activities in the re-use of public sector information published in Dz.U. 2016. item 352 and Dz.U. 2016, item1579; Act of 7 November 2014 on facilitating the performance of business activities Dz.U. 2014, item 1662; The Act of 18 July 2002 on the provision of electronic services, Dz.U. 2013, item 1422 Dz.U.2015, item 1844, Dz.U. 2016, item 147 and Dz.U. 2016, item 615; The Act of 16 July 2004 Telecommunications Law, Dz.U. 2016, item 1489.

[2] This also applies to sites that are in beta phase, or not yet published.

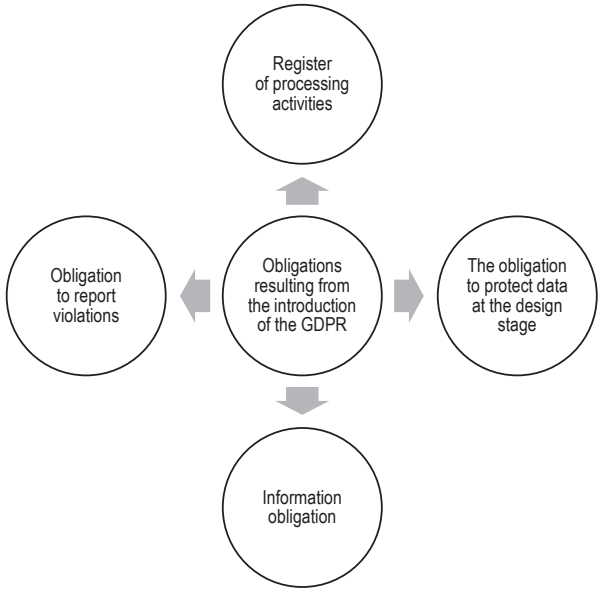


Figure 1. Basic changes related to data protection

Source: own study.

Under the new regulation, in the event of cybercrime or another breach of personal data protection, entities will be obliged as soon as possible, but not later than within 72 hours of becoming aware of a breach of security, to inform the appropriate data protection authority. The result is that entities will have to admit to violating regulations introduced for personal data.

One of the most important changes introduced by the GDPR is the register of processing activities; this document includes the purposes for which personal data are processed and information about persons who are the administrators of such data. The document is supposed to bring about transparency because it will precisely define: what data it is, the way in which data is protected, who administers the data and has access to it. There is no requirement as to the form of the document (it can even be a plain text document or an .xlsx file). It is important that the above information is clearly derived from the document. Each of the persons, whose data is processed, can report to the organization asking for information about what his/her data is processed, and thus has the right to change or delete it. Then such a document may turn out to be crucial.

The project provides for the establishment of an independent body dealing with matters of personal data protection – the President of the Office for Personal Data Protection (PUODO). He will replace the Inspector General for Personal Data Protection. The advisory body for the President of the Office will be the Council for the Protection of Personal Data established by him.

Changes in data protection due to a new legal solution from the organization's point of view

All entities operating on the market will be required to implement a completely new system ensuring compliance with data protection principles and covering technical and organizational as well as legal issues. The application

of, among others, privacy protection principles will be required at the very beginning of the design phase of specific technological solutions as well as taking into account how data processing may affect customer privacy, especially in cases involving customer profiling or monitoring of geolocation data collected in public places. The general scheme for implementing the data security system is shown in Figure 2.

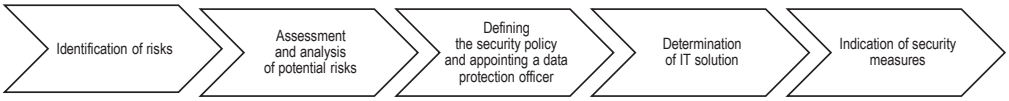


Figure 2. Basic elements related to the introduction of data security

Source: own study.

The implementation of data security in an entity must begin with an assessment and analysis of the risks that exist or may occur in an entity. Only conducting of such an analysis will allow determining what type of IT solution can meet the requirements. When making this selection, entities will be required, at the request of the institutions and offices supervising the performance of the GDPR, to demonstrate that the solution has been selected in terms of compliance with the data processing principles. The next step is to check the security policy and IT system management instructions and update them. Meanwhile, entrepreneurs will have to indicate security measures and procedures for secure data processing, including actions that must be taken in the event of a specific threat, for example, the so-called data leak.

Changes in data protection due to a new legal solution from the point of view of a member of society

The new rights of persons whose data will be processed are presented in Figure 3.

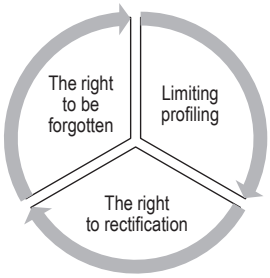


Figure 3. New rights resulting from the GDPR Regulation

Source: own study.

The right to be forgotten was actually in force, but it was not used, due to the imprecise wording. The GDRP introduces the right to be forgotten as an explicitly written provision for every person whose data is processed.

Article 17 gives the person, to whom the data relates the right to request immediate deletion of his personal data, including in a situation where:

- personal data are no longer necessary for the purposes, for which they were collected or otherwise processed,
- the person to whom the data relates has withdrawn the consent on which the processing is based and there is no other legal ground for processing,
- the person to whom the data relates objects to the processing and there are no overriding, legitimate grounds for processing,
- personal data were processed unlawfully,
- personal data has been collected in connection with offering services of the information society.

Limitation of profiling[3] are the rules that lead to profiling constraints, including the obligation to obtain consent for profiling before the start of data collection, a strict obligation to inform about profiling, and the need to accept a lack of consent for profiling.

The right to rectify is a provision in the GDPR, which gives every person the opportunity to view their personal data. Everyone will be able to not only see at any time what personal data are processed by entities but also will be able to correct it, that is, withdraw, change or limit to a smaller amount of data.

Conclusions

When comparing the costs and benefits of efficiency, security, accessibility and management of the IT infrastructure, a decision should be made on optimally selected measures that will be part of the personal data processing system. It should be decided whether it will be created within its own premises and technical resources, or whether external entities should be used (Kołodziej 2017). Solutions related to the electronic flow of documents must be observed in order to assess the risk and continuously increase the level of security. This means that the fee for these services will not be one-off, but fixed – and incurred periodically.

Ensuring an adequate level of security of personal data processing that guarantees data consistency and limiting the possibility of losing certain data, as well as deletion, modification or confidentiality is directly related to the implemented security policy, including organizational and program security, which inevitably involves incurring financial outlay by all entities operating on the market.

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THE ROLE OF INTEGRATED TERRITORIAL INVESTMENTS IN SUPPORTING THE COMPETITIVENESS OF ENTERPRISES BY THE EXAMPLE OF BIALYSTOK FUNCTIONAL AREA

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Abstract

Integrated Territorial Investments (ITI) is a new support instrument dedicated to solving specific territorial problems of urban functional areas. About 6% of the allocation of the Regional Operational Program for Podlaskie Voivodship 2014–2020 is planned for realization of activities implemented in frame of ITI in the Białystok Functional Area (BFA). This support is for: strengthening the potential and competitiveness of the region's economy, enhancing competences and qualifications, low carbon economy and improving social cohesion. In particular, the support for business development by increasing investment attractiveness is planned. Allocation of ITI for this purpose is ca. 13,7 mln EUR. The aim of the article is to assess the state of entrepreneurship development and the range of support for the competitiveness of enterprises in the BFA in frame of ITI instrument. It will be presented a case study of projects implementing in BFA in frame of ITI instrument to support enterprise development and research conducted by Bialystok Functional Area Association (BFAA). Case study will be preceded by an analysis of the competitiveness of the local entrepreneurship and analysis of theoretical issues.

Introduction

Functional Urban Areas (FUAs) provide a comprehensive look at the problems and challenges of modern cities. The term derives directly from the concept of the daily urban system of Berry from 1973. It concerned the designation of the area around the city, the scope of which is determined by everyday connections related to constant commuting to work, places of study, etc. (Bartosiewicz, 2016). FUA's theory assumes, that the development

of settlement units is not independent, but that the flow of persons, goods, services, capital and information between the central city (core) and the adjacent units is closely linked. According to *Koncepcja Przetrzennego Zagospodarowania Kraju 2030* (KPZK) (2011), FUA is a settlement system composed of administratively separate units maintaining spatial continuity. It consists of a city and an urbanized area that is functionally linked to the city. In the economic theory, functional area is included in the Core Area Theory i.e. the area created around a significant urban centre, having mutual connections and burdens regarding the exchange of people, goods, services, capital and information (Szafranek, 2015) It falls into the concept of a core and a periphery by J. Fridman, who indicated that manufacturing and service activities are located in the most developed regions, mainly in big metropolitan centers. Additionally, these are the centers that dominate over peripheries, which development is subordinated as they provide services to central areas. The centers aim to dominate in various areas of social, economic and cultural activities. Therefore, it is important to stimulate the development of such central areas in the regions (Grosse, 2002). Szafranek (2017) notes, that in the functional area between the center and its surroundings must be a mutual connection. Both the center and its sphere of influence perform important, complementary functions, which depend on the level of socio-economic development and functional, spatial diversity of FUAs.

KPZK (2011) identifies four basic types of FUAs: voivodeship, regional, sub-regional and local. The basis for the diagnosis for the MOF typology found in KPZK 2030 was delimitation functional urban areas in the ESPON 1.4.3 project "Study on urban function". Delimitations arising from documents on regional levels are not always consistent with the results carried out by the EU. In 2012, the Ministry of Regional Development elaborated criteria for deleting FUAs according to the methodology using three groups of indicators, developed by Śleszyński. The most important role in urban and regional policy is played by functional areas of voivodship and regional cities. (Kociuba, 2015)

Integrated territorial investment (ITI) is a new European Union (EU) financial instrument for 2014–2020, that supports the approach of FUAs. The essence of this instrument is to provide the mechanism of integrated answers to various needs formed within the functional areas development strategy. It is a results of assumptions of EU regional policy indicating that cities and their networks should become a link of socio-economic development of countries and regions. (Szafranek, 2017) Partnership Agreement (*Umowa Partnerstwa*, 2015) introduced an obligatory character of the ITI instrument in voivodeship cities and additionally it was made possible to implement ITI in regional/sub-regional cities and towns and in the areas functionally connected to them. The basic conditions that were linked with the mobilization of ITI funds includes among others: preparation of ITI strategy, signing the agreement to implement ITI in a voivodeship with the managing institution of Regional Operational Programme (ROP), possessing proper institutional ability, establishing institutionalized partnership form. (*Zasady realizacji…*, 2013). In this way, conducting policy towards FUAs constitutes a significant support factor that better defines their development potentials and is a comprehensive solution to the already existing problems (*Krajowa Polityka Miejska 2023*, 2015).

On the basis of the above, the following definition of ITI can be adopted – as a socio-economic development tool of the cities' functional areas, implemented as a result of institutionalized form of cooperation between self-governments for the support of integrated and comprehensive activities resulting from territorial strategies and implemented with the participation of EU funds.

In the financial perspective 2014–2020, ITI instrument in Poland is implemented by 17[1] functional areas of voivodeship cities and 7 regions/sub-regions: Jelenia Góra Agglomeration, Wałbrzych Agglomeration,

[1] In Lubuskie Voivodship there are 2 functional areas with the core in Gorzów Wielkopolski and Zielona Góra.

Silesian Voivodeship's southern sub-region, Silesian Voivodeship's northern sub-region, Silesian Voivodeship's western sub-region, Kalisz and Ostrów Wielkopolski as well as Koszalin–Kołobrzeg–Białogard Functional Area. (*Zintegrowane…*, 2017) ITI aims to ensure the long-term co-operation of municipalities of functional areas through cooperation in projects aimed at solving common socio-economic, environmental and demographic problems. One such problem is also promotion and development of entrepreneurship. Of the twenty four functional areas in Poland implementing ITI, support for strengthening the competitiveness of enterprises is realized in sixteen FUAs.

Method

The paper was developed on the basis of case study analysis and research conducted by Bialystok Functional Area Association (BFAA): "Strategic monitoring of urban functional areas implementing Integrated Territorial Investments in Poland (Pilot Study), Report 1. Strategic indicators at voivodship level" (Mierzyńska, Perło, Truskolaski, 2016). The research period covered the years 2010–2014 and concerns the topic of increasing the competitiveness of enterprises by co-financing from Integrated Territorial Investment. The paper contains also a comparison of the projects (case studies), that are implementing in frame of *Integrated Territorial Investment Strategy of Białystok Functional Area for the years 2014–2020* (2016) in that field. These analysis were preceded by introduction to the theory of functional areas and integrated territorial investments. The aim of the research was to assess entrepreneurship development and the range of support of the competitiveness of enterprises in the Bialystok Functional Area (BFA) from ITI tool. The main research questions concerned following issues: what is situation of entrepreneurship development in the Podlaskie voivodship; what kind of undertakings are planned to be co-financed from ITI tool in the area of strengthening competitiveness and entrepreneurship in the BFA and what effects it will bring?

Results

Entrepreneurship in Bialystok Functional Area – main data

The total sum of 6.2 mld euro is devoted for the implementation of the ITI strategies in Poland. In BFA, it is the sum of 76 mln euro and for the support of entrepreneurship it is 12.15 mln euro (16% of the joint ITI allocation). BFA is situated in the area of 1 728 km^2 (8.6% of Podlasie's area) and 34.7% of Podlaskie Voivodeship citizens live here (about 413 thousand inhabitants). It includes 10 municipalities. BFA belongs to medium-sized functional areas (14th position in 24th FUAs in Poland), but compared to the voivodeship cities implementing ITI, it is rather small (11th position). (Mierzyńska, Perło, Truskolaski, 2016)

Below, there are a few of the selected indices presenting the condition of entrepreneurship in the BFA area as well as in Podlaskie Voivodeship that are the subject to the analysis within the research conducted by BFAA. These indices were identified as strategic for the implementation of EU objectives regarding the improvement in companies' competitiveness[2] (Mierzyńska, Perło, Truskolaski, 2016)

The general index of BFA entrepreneurship i.e. the relation of the number of economic entities in general per 10 thousand inhabitants, places itself at the level of 1073 and is one of the lowest – 19th position in 24 FUAs.

[2] Report contains wider analysis of the indices (jointly 14 for each of the voivodeship. Some of the data are only collected at the level of voivodeship and therefore in Report there are only general conclusions drawn from these indices' analysis. FUAs as poles of development of voivodeship, have the greatest impact on development and such an analysis is justified.

It indicates quite low entrepreneurship of this region. Also, the investment outlays in companies in relation to GDP in Podlaskie Voivodeship are not the highest. In 2014, it amounted to 7.3%, which placed this region in 14th position in vivodeship FUA's ranking and constituted 83% of the national average. The positive aspect is that in spite of high dynamics in 2010–2014, this index in that period increased by 26%. The target value assumed in the ROP of Podlaskie Voivodeship for 2014-2020 in 2023 is supposed to reach 11.1%. The index describing the gross fixed capital formations in national economy reflects the need to support entrepreneurship and competitiveness. In 2013, the formations amounted to 7766 mln PLN and constituted only 40% of the national average, which was 19481 mln PLN. The growth rate of this index in the research period was also low – on average year by year it grew by about 2%. Next index, the gross turnover profitability rate is greatly below the average – 79% of the average in 2014 and amounted to 3.4%. It is one of the worst results in the country. The support within ROP assumes the increase in this index to 3.91% in 2023. The last strategic index is the average participation of innovative companies in the general number of industrial companies and from the service sector. In 2014, it amounted to about 14.7% and was slightly above the average – 102%, which placed the region in 6th position. The assumed value of this index in 2023 is supposed to reach 23.4% for industrial companies and 12 for the service ones.

Supporting businesses within integrated territorial investments in Bialystok Functional Area – examples

The activities determined in ITI BFA Strategy (2016), when it comes to supporting companies, concentrate on the priority to support investors and by doing so boosting entrepreneurship. There are two basic activities foreseen to

Table 1. Projects supporting the investment attractiveness in BFA

Applicant	Project characteristics
1	2
City of Białystok	The project's objective is to improve the conditions for running and developing economic activity by comprehensive preparation of areas located in Krywlany, which constitute a part of the Białystok Sub-Zone of the Suwałki Special Economic Zone. Service activities, business premises covering the area of above 2000 m2 as well as industrial facilities are supposed to be developed here. Current project's status: approved application's assessment
Łapy Municipality	The municipality is implementing an integrated project, which in one part pertains to providing utility infrastructure to the areas and in the second part – the improvement in transport accessibility. Providing investment area's utility infrastructure is about preparing for investment the post-industrial area i.e. water and sewage holding tank of the former 'Sugar Factory in Łapy' ('brown-field' type). The second project relates to building the local road – Nilskiego-Łapińskiego as well as two sections of Cukrownicza street that will improve communication accessibility to investment areas. Current project's status: co-financing agreement
Supraśl Municipality	The municipality is implementing an integrated project, which in one part pertains to providing utility infrastructure to the areas and in the second part – the improvement in transport accessibility. Rebuilding and building streets (Kodeksu Supraskiego street with extension to Rymark street as well as the roads around investment areas) aim at improving transport links with voivodeship road No. 676 and it will have a positive impact on communication's quality in Supraśl, which is a health resort. Providing utility infrastructure to the areas will influence the development of the municipality on the basis of entrepreneurship of such fields as tourism, recreation, health care by providing high standard of leisure and tourism products' functioning. Current project's status: co-financing agreement
Zabłudów Municipality	The municipality is implementing an integrated project, which in one part pertains to providing utility infrastructure to the areas and in the second part – the improvement in transport accessibility. The subject of the first project is to provide utility infrastructure (e.g.: water and sewage) to unutilized areas ('green-field' type) belonging to the Municipality in order to boost entrepreneurship. The second project relates to the implementation of activities connected with rebuilding the national road No.19 in order to facilitate access to the Municipality's investment areas. Current project's status: approved application's assessment

Source: Municipalities' data (September, 2017).

increase investment attractiveness of BFA. The first one relates to supporting investors and innovative undertakings and building durable innovative potential of BFA by developing cooperation in the field of R&D. In activity 2, financed within the ITI instrument, apart from providing utility infrastructure to investment areas destined for companies, there is also the improvement in accessibility to these areas. These are the so-called 'hard' projects connected with providing the necessary infrastructure including, among other things, building and rebuilding: roads, sanitary sewage, water supply network, cord telephone lines, lighting, technological channels. Table 1 presents the characteristics of the undertakings supporting the investment attractiveness planned by 4 municipalities of the BFA.

All the above mentioned applicants have already submitted applications for co-financing of the planned projects within the ITI instrument. The agreements were signed in both cases. The remaining 2 projects are at the stage of assessment and approval of the co-financing applications.

The direct result of the undertakings implemented within the ITI instrument in the field of entrepreneurship (activity 1.2 of the BFA ITI Strategy) will be about 62 ha of land of the prepared investment areas, 15 investments of entrepreneurs located in those areas as well as 3 km of built/rebuilt roads facilitating the accessibility of the given investment areas.

Table 2. Results of projects supporting investment attractiveness of BFA municipalities

Municipality Indices name	Białystok	Łapy	Supraśl	Zabłudów	Total
The number of investments located in the prepared investment areas (items)	6	4	3	2	15
Acreage of the prepared investment areas (ha)	44	10.78	2.48	4.6	61.86
Total length of new roads (km)	0	0.7	1.37	0	2.07
Total length of the rebuilt or modernized roads (km)	0	0.26	0	0.38	0.64

Source: Municipalities' data (September, 2017).

The anticipated results of the investment refer also to such aspects as:

a) utilizing the undeveloped assets belonging to a municipality by extending the offer to new investment areas;
b) providing the conditions for the creation of new workplaces and so reducing negative phenomena connected with unemployment (among others, migrations);
c) increased interest in the municipality of potential investors;
d) enhancing accessibility to investment areas.

It should be noticed that the implementation of the above mentioned investments will not solve all the BFA's problems in the field of supporting companies and entrepreneurship. The assumed activities can be treated as a good first step for building investment attractiveness and drawing entrepreneurs to these areas. Further activities should develop and complement the implemented projects, e.g. in the field of economic promotion and facilitations for entrepreneurs in running economic activity in the given area.

Conclusions

According to the issues presented in the text and by relating to wider conclusions of the research conducted by BFAA, the following conclusions and recommendations can be drawn:

1. Not all the BFA's municipalities are engaged in the activities connected with supporting competitiveness of companies in frame of ITI allocation. However, the activities in this field within functional areas constitute the result of not only ITI relations, but also particular municipalities, which implement the activities connected with creating the conditions for the companies' competitiveness.
2. The Podlaskie Voivodeship is in the class of regions that they diagnosed the greatest need for support in the area of increasing competitiveness, by allocating for this purpose a relatively high level of the ITI allocation.
3. The integrated approach to the development of functional areas is a positive direction of changes aimed at building a culture of partnership and competitiveness in the FUAs.

On the basis of the study you can also draw a general conclusion. The strategic indicators proposed in the ITI strategies and ROPs prevent efficient monitoring of the development of FUAs. They were often defined imprecisely on the basis of experts' calculations and not on public statistics, which makes systematic analysis impossible.

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MEASURING THE EFFECTIVENESS OF INFLUENCERS' ACTIVITIES

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ABSTRACT Kuba Klawiter, who is in Poland one of the most known influencers in the new technologies industry, took part in the online campaign of x-comput store. After announcing to the subscribers the details of the promotional campaign dedicated to them, he made the servers block after 5 minutes. Marketing influencer has been developing on the Polish market for two years. The purpose of this article is to describe influencerów activities and to identify examples of indicators that can be used to study the effectiveness of their operations. The article is based on secondary sources.

Introduction

Marketing influencer has become an element of the Polish market. More and more companies use such a person in their activities, because they have many advantages and are a relatively new tool on the Polish market. According to the Promosphere study (2016) "Shopping habits of Poles": 78% of consumers searched online information before making purchase decisions. When searching for information on the web, the seekers encounter

blogs, forums, opinions, advice, videos, photos – influencers' accounts. However, according to a report by the Polish Association of Bloggers and Vloggers and Hash.fm, for 72% of readers of blogs and vlogs are the first source of information about products and services – more important than the opinions of family and friends. 60% of regular customers use them to make informed purchases, and 53% admit that they made purchases under their influence (*Raport...*, 2018). That is why the development of marketing influencer is so dynamic. They were the fastest growing tool in 2017 and their development in 2018 is estimated even higher than last year. It works on the basis of influencers, i.e. people who enjoy high popularity and recognition among a group of people. They constitute "authority" in their area to their recipients and have a great influence on the behavior of their observers.

Most often, the reasons for using marketing influencer in the company include (Kotlinski, 2018):

- authenticity – influencers often show their everyday life, which is not stylized and this authenticity translates into the trust and engagement of recipients,
- originality – influencer can in a very unimaginable way warm up the image of a brand, and at the same time affecting the sale,
- inbound – the recipients do not like the sales content, which is currently abundant. That is why recipients should be provided with the content they need and appreciate,
- return on investment – there are many examples on the market showing that well-planned cooperation means immediate sales results and long-lasting image effects,
- fight with adblock, i.e. blocking the viewing of advertisements through various plugins – marketing influencer by product placement eliminates the possibility of blocking advertisements and in addition they are shown where people want to watch them.

Measurability of marketing influencer's effects

There are currently many tools on the market that measure the effectiveness of influencers' engagement in the company's marketing activities. One of the most well-known indicators used in many marketing activities is ROI (investment profitability), which shows whether the company received the expected results in relation to the expenditures incurred.

The value of the indicator that can be obtained depends to a large extent on the campaign's goals. If these are very general goals, e.g. increasing brand awareness, the effect of the actions is difficult to measure. The goals that should be set in influencer marketing should be as detailed as possible and refer to the possibilities of a given social media.

The most frequently mentioned indicators are: campaign reach, audience involvement, lead acquisition, sales.

The range of the campaign can be determined by the number of followers, checking how many of them joined a given social media. It is also possible to analyze the traffic on the website, checking how many sites were available after publishing materials related to the company and what source the recipients come from (Cilińdź, 2018).

Customer engagement shows how much the content shown was interesting or valuable to them. This point is also important due to the constantly changing Facebook algorithms, which differentiate the ranges of posts depending on the number and type of user reactions. Commitment is also closely related to the so-called coefficient of involvement, understood as a common denominator for a simple comparison of two influencers. Depending on the number of fans and their interactions, one can make an analysis that was more effective. You can measure the

coefficient of involvement in several ways – by focusing on posts or on fans. It is important to use the same model throughout the analyzes (Sadowski, 2018).

Google Analytics Demographics is a free tool that allows to analyze whether the sent message or visitors to the company's website are part of the target group that was previously defined and which is the company's priority. Also, thanks to Google Aalytics one can check which medium generated the most traffic on the company's website, so that future marketing activities can be transferred to the medium that is most popular among the company's clients and gain even more leads.

Measurability of influencer's activities is also possible through (Sadowski, 2018):

- the number of purchases made through an affiliate link with the use of a special discount code – this allows to learn the source from which the buyers came, what their average basket value is and what they buy most. In the future, it is possible to check whether these users are returning and making subsequent purchases;
- number of participants/contest – it is worth measuring how many people took part in it,
- media buzz – it is worth checking whether the campaign has translated into the number of entries in which the brand was mentioned, especially when a certain hashtag is promoted during the campaign, or when the actions taken can have a real impact on the amount of content about the brand (e.g. cooperation with influencer, under the influence of which Internet users buy a product can bring an increase in the number of reviews or entries recommending/anti-recommending a product).

Table 1 presents the elements whose increase can constitute the goals of the campaign with the participation of influencers.

Table 1. Measures in influencer marketing

Elements of measurement	Branding	Purchase intentions	Direct response
1	2	3	4
YuoTuBe			
Subscribers	x		
Entries from social media	x		
Views	x		
Likes	x	x	
Link clicking	x	x	x
Visits	x	x	x
Comments	x	x	
Response	x	x	x
Sharing	x	x	
Entries from exit-pop-up	x		x
WordPress			
Entries from social media	x		
Post views	x		
Observers	x		
Comments	x	x	
Link clicks	x	x	x
Visits	x	x	x
Entries from exit-pop-up	x		x

1	2	3	4
Facebook, Twitter, Instagram			
Likes	x	x	
Views	x		
Comments	x	x	
Sharing	x	x	x
Link clicks	x	x	x
Entries from exit-pop-up	x		x
Pinterest			
Number of repins	x	x	x
Sharing	x	x	
Comments	x	x	
Entries	x	x	x
Close-ups	x	x	x
Observers	x		
Views	x		
Range	x		
Involvment	x	x	
Entries from exit-pop-up	x		x

Source: Sadowski (2018).

There are also a number of IT tools on the market that are often free and they allow for analyzing various elements of the marketing of the marketing influencer. The most popular include (Głuchowska, 2018):

1. Google Analytics – allows to generate dozens of types of reports on Internet traffic, conversions and ROI.
2. Google Tag Manager – allows to easily work, e.g. with tags, and thanks to that, check where traffic to the website comes from, how users behave and generally monitor any online campaigns without the participation of IT professionals.
3. Campaign URL Builder – allows to check where the users have come from (utm_source), how they came, from what medium (utm_medium) and from what campaign (utm_campaign).
4. Piwik – allows to analyze access to the website and traffic on the WWW. It differs from Google Analytics with the fact that data is stored locally, so one can have full control over it.
5. Branch Metrics – allows to create deep links to online campaigns and conduct business analysis, i.e. in terms of conversion, ROI or user involvement.
6. Bitly – similarly to Campaign URL Builder and Branch, it allows to track the behavior of users clicking on a link, although it is often associated only with shortening of links.
7. Brand24 – the most popular tool used by marketers to track records in the network and social media about their own brands and other interesting keywords.
8. Internal statistics of social networks (Facebook, Instagram, Twitter, LinkedIn) – thanks to reports from social media statistics, the influencer can be asked for, one can see how engaging for the fans published content associated with the brand was.
9. Iconosquare – allows to get detailed statistics on specific accounts from Instagram and Facebook, allowing to monitor their subscribers.
10. Cyfe- allows to create a personalized panel to collect statistical data from various sources in one place.

11. Socialmention – a simple search engine for social media and blogs that will quickly find content on a specific topic, including the brand promoted by influencer.
12. Mention – a tool to monitor the Internet in real time, it analyzes the actions of competitors, searches for influencers, discovers consumer insight, i.e. the needs of recipients.

Conclusions

In the case of influencer marketing, as in any other marketing area, it is very important to regularly measure the results achieved. All analytical tools related to marketing activities or social media only will show values regarding the engagement of message recipients, reaching a specific group of messages, while from the point of view of the company's functioning, it is important to translate this data into the sale of a product or service.

One should not limit their activity to trusting or believing that someone will view, comment or share content and bring a favorable response. Implementation of measures that show what the return on investment was is crucial. The measures will allow for comparison of subsequent actions with influencers and will allow for deciding if they were valuable or not. Whether the social media channel is good for the brand or whether we reached the right opinion leaders? However, such an assessment is not simple. It is often difficult to indicate which component of influencer marketing translated into sales growth. It does not mean that it is impossible. If we use professional tools, it will turn out that the expenses for the promotion brought the expected returns. This was proved by Tomoson study conducted on 125 marketers. The answer to the question, what was the ROI in your campaign using influencers, showed that, on average, for each dollar invested there was an impressive $6.5 return. 70% of respondents had a return of $2 or more. The best reached as much as $20. (*Raport*…, 2018).

These results clearly show that through properly selecting influencers for the company's needs it is possible to achieve very good results for little money. Such examples of successfully carried out activities are also frequent on the Polish market.

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EFFECTIVENESS OF INVESTMENTS IN MUNICIPAL WASTE MANAGEMENT IN POLAND IN THE CONTEXT OF GOALS OF THE CIRCULAR ECONOMY

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ABSTRACT

Municipal waste management has become one of key areas for a circular economy. The European Union has founded its new strategy (Europe, 2003) on such an approach: wastes are raw materials and hence, it is possible to limit acquisition of original resources. To achieve the goal, a relevant sequence of proceedings regarding wastes has been approved: prevention, preparation for re-use, recycling, recovery, neutralization. It means that the municipal waste management must be based, most of all, on selective collection of wastes and on recycling, including fractions which have been weakly used so far, among others bio-degradable wastes. These relatively new goals enforce re-assessment of already planned and performed investments in the field of possibilities to perform them and efficiency of commenced municipal waste management reform. In Poland, the changes in question in a great scale started in 2013, after amendment of a law enabling communes to manage wastes and making them responsible for performance of estimated goals. It resulted in, among others, concentration of direct investments in the area of waste management, financed from treasury and Union's funds, private and public ones. Investment plans and already performed investments show that no proceedings hierarchy has been observed and hence, it may cause competition of particular investments for access to wastes and potential import of certain fractions. As a result it will decrease efficiency of certain installations and it may cause failure to follow required recycling rates; consequently, the Union may impose sanctions on Poland for failure to fulfill its obligations. The aim of the paper is to indicate that the waste targets, as a tool of circulate economy requires appropriate waste treatment installations. However, the selection of these installations should be made at the state level, because leaving the choice to the investor does not secure technical possibilities to achieve the objectives of municipal waste management, neither in terms of quantity nor cost. The paper follows a case study approach. The paper is based on the analysis of existing and planned waste treatment installations in Poland in relation to the quantity and composition of waste generated by households. The further part of the article is a discussion whether the existing and planned investment directions are in line with the accepted waste target and allow for their achievement at the lowest possible investment outlays.

Introduction

For couple of years Poland has not been managing produced municipal wastes. Most of the wastes were sent to (waste) yards and a selective collection at source has been unknown in practice. A lot of changes in this field have been enforced from the moment of "wastes revolution" in 2013 and obligation to carry out selective municipal waste collection (Monitor Polski 2016, poz. 784). In order to follow new regulations, there have been erected, among others, new installations and wastes processing plants. Funds originated mainly from public finances (central budget, budgets of voivodships, communes and poviats), target funds (national and voivodship environment protection funds and water management fund) as well as from abroad. Positive effects of the changes in question are noticeable but it is necessary to verify their efficiency at the domestic level and to assess meeting of assumed goals of the circular economy as a determinant of actions in the field of the municipal waste management. Specificity of the municipal waste management sector and financing it from public finances to the large extent makes that market regulation mechanisms are limited and it is necessary to control proper allocation of the resources.

Waste target as tool of circular economy – legal basis

Basic assumptions of the circular economy were prepared by the European Commission in 2015 (COM/2014/0398 final/2). The main one is conversion of wastes into resources by performance of proceedings hierarchy regarding wastes, in particular:

- stimulation of best practices in this field,
- development of innovative recycling technologies,
- reduction of (waste) yards,
- development of stimulants encouraging consumers to change their behaviors (COM (2017) 34 final).

In order to monitor progress of performance of the goals in question, particular quantity goals were developed and entered into European Union's law, among others into a frame directive on wastes (Dz.U. UE L z 22 listopada 2008) as well as in domestic laws, in Poland in the act on wastes (Dz.U. 1996, nr 132, poz. 622). They have also been transposed into the Domestic Waste Management Plan 2022 (KPGO 2022) (Szpadt, 2010), which is a determinant for development of the Polish waste management system for incoming years. As quantity goals, which could be a sort of circular economy performance rates[1], the following ones have been assumed:

a) recycling rate and preparation for re-use of resources fraction[2] – min. 50% of their mass by 2020;[3]
b) share of mass of thermally processed municipal wastes originating from processing of municipal waste, in relation to produced municipal wastes must not exceed 30%;
c) by 2025 at least 60% of communal waste must be recycled;
d) by 2030 at least 65% of communal waste must be recycled (COM (2017) 34 final);
e) reduction of municipal waste landfill up to max. 10% by 2030;
f) reduction of municipal waste subject to bio-degradation, addressed to the waste yards, in such a way that in 2020 no more than 35% mass of such waste is stored in relation to mass of waste produced in 1995.

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[1] When calculating percentage values one needs to include all municipal wastes received and collected (also building wastes originating from households), information from Monitor Polski 2016, poz. 784.

[2] Municipal waste (paper, metals, plastics and glass).

[3] New accepted European Commission's proposals command achieving 75% rate by 2030.

Entries of the partnership agreement (COM/2014/0397 final – 2014/0201 (COD)), which is basis of the financial perspective of the European Union 2014–2020 repeat the quantity goals and declare allocation of the financial means for development of system of wastes selective collection, assuring collection of waste to be recycled, taking steps intended to change behaviors of people in the field of proper segregation of wastes "at the root", increase in use of already existing economic instruments promoting proper collection and management of wastes, and development of installations designed to sort wastes collected selectively. These entries are accordant with Union's entries on financing of the entire circular economy pack. The most important regulations are:

- public support for projects goal of which is anticipation of a crisis of deliveries and reduction of European Union dependency on strategic resources import,
- achievement of a synergy between social benefits and economic reliability of financed projects,
- support for projects assuring technological innovations,
- approval of support for non-technological innovations (business innovations, social and organizational ones) (*Assessment…*, 2015).

Simultaneously, certain operational goals were reserved. Namely, erection of yards is permitted only in justified cases, especially in case of non-recyclable hazardous wastes, and erection of new installations intended to incinerate residue wastes (incineration plants, MBP installation) is possibly only if there is no risk to erect excess infrastructure and hierarchy of wastes is observed totally (COM/2014/0398 final/2).

Generation of municipal waste and treatment plants in Poland

Official data on quantity of produced waste seem to be underestimated. It results that quantity of produced wastes has been falling down step by step, despite growing GDP (3–4% annually) and minor drop of quantity of inhabitants (from 2010 number of inhabitants dropped by approx. 100 thousand) (GUS, 2017). Such a relation has not been achieved by any developed country. Moreover, in Poland we produce nearly 2 times less waste per inhabitant. At the same time, 2 M Mg of wastes are found at illegal (waste) yards (GUS, 2016). It is shown at the fig. hereunder.

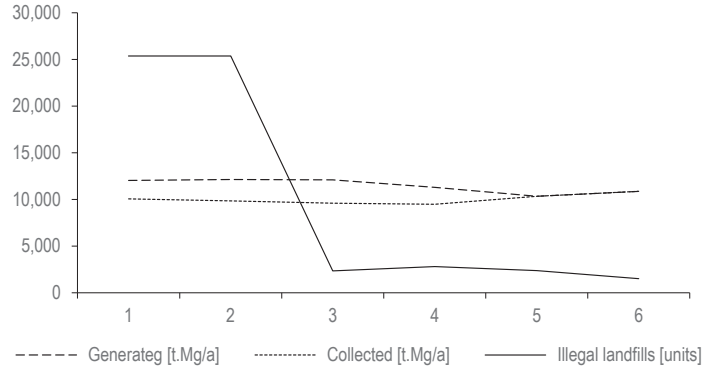


Figure 1. Generated wastes, collected [thousands Mg/annually] and illegal landfills 2010–2015

Source: own materials based on GUS' data, Environment Protection 2016.

Hence, forecasts of wastes produced in 2030 must equal 14–15 M Mg/a (Styś, Foks, Moskwik, 2016), and not, as it results from estimations based on the GUS' data, approx. 12 M Mg/a.[4]

Many years in Poland no municipal waste management was performed and, from 2010 no. of installations other than yards, has been growing up. Nevertheless, yards still are being erected. In 2010 (waste) yards could accept more than 1 M Mg/a, and in 2013 nearly 800 thousand Mg, in 2014 – 200 thousand Mg, and in 2015 – 400 thousand Mg From 2012, performance of the solid wastes composting installation has been growing at the rate approx. 400 thousand Mg annually (with exception of 2013 when the annual grow equaled approx. 100 thousand Mg). From 2014 to 2015 there occurred municipal wastes incinerating plants and their total performance equals approx. 118 thousand Mg/a. From 2013, there also has been growing up performance of installations intended to liquidate wastes in a way other than biologically or thermally, by approx. 230–300 thousand Mg/a. There also has been growing up performance of devices intended to use the municipal waste, from approx. 120–150 thousand Mg (2010–2012) up to 600–700 thousand Mg/a from 2013–2015. performance of installations put to operation, in form of percentage, is presented in the Figure 2.

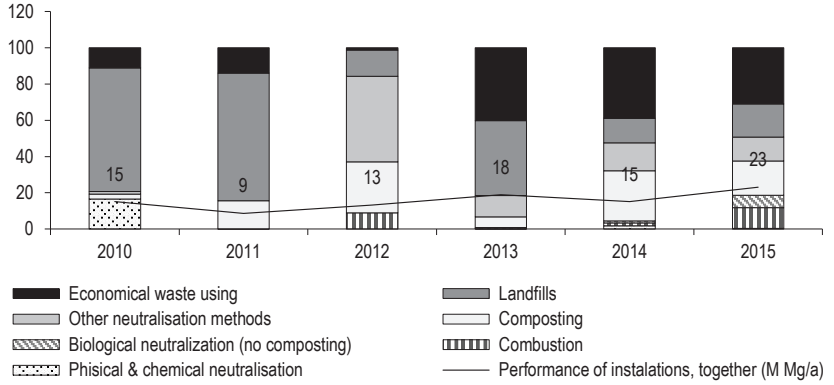


Figure 2. Performance of municipal waste treatment installations, put to operation from 2010 to 2015 (%)

Source: own materials based on GUS' data, Environment Protection 2016.

Simultaneously, from 2010 to 2015 there were erected varied types of installations without clear trends in this field. Annual growth of performance of all installations shows clear growth tendency and it fluctuates from 1 to 1.5–2 (2013–2015) M Mg/a.

Mostly, investors in undertakings in the municipal waste management are companies, however, invested capital originates mainly from public funds. The following graph demonstrates share of fixed capital formation originating

[4] In 2022 all forecasts were based on official data and min. & max. variants were approved. For 2025 the following values were approved 11,797,074.11 Mg/annually and 11,399,956.8 Mg/annually, and for 2030, 12,280,372.2 and 11,682,021.6 Mg/annually (Szpadt, 2010).

from public funds.[5] Total fixed capital formation allocated to investments into municipal waste management show constant progress, from PLN 700 M in 2010 to 3 B in 2015.

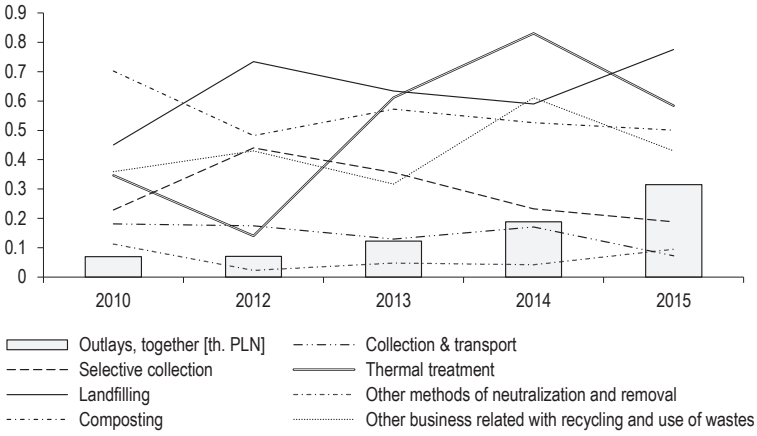


Figure 3. Share of public funds in finances intended for fixed capital formation in the waste management 2010–2015 (%)

Source: own elaboration on the grounds of GUS [Main Statistical Office], Environment Protection, 2016.

The highest share of public funds in finances intended for fixed capital formation [6], at 60–80% level, is assigned to landfills and waste thermal processing installations. Share of public funds in investments related with composting installations equals 50–60%. Transport of wastes and selective collection are characterized by share of public funds at the approx. 10–20% level (in particular from 2014 to 2015), and other methods of liquidation (with exemption of composting) approx. 5–10%. Only in case of selective collection of municipal wastes, share of public funds went down by half, from approx. 40% in 2012 to approx. 20% in 2015. In case of remaining business related with recycling and use of wastes, including municipal wastes, share of public funds has been growing up, from approx. 30–40% (2010–2013) to approx. 50–60% (2014–2015). Taking ownership structure in companies into account (frequently 100% held by communes), share of public means may be even higher.

Availability of particular fractions of municipal wastes in a context of circular economy goals

In order to determine supply of municipal wastes in the perspective of 2030 it is necessary to determine quantity of produced wastes and their morphology as well. Because of described problems regarding estimation of produced wastes, min. variant was accepted that is 12 M Mg annually (KPGO 2022) and max. 15 M Mg. Quantities of particular fractions were estimated on the grounds of morphological content established in KPGO 2022 (Szpadt, 2010). The amounts in question are entered into Table 1.

[5] Resources originating from the treasury (central budget, budgets of voivodships, communes and poviats), target funds (national and voivodship environment protection funds and water economy) as well as from abroad.

[6] Acc. to GUS' methodology, fixed capital formation means purchase of lands (including perpetual usufruct), buildings and premises, civil engineering structures (including building & mounting works, design and cost assessment documents), technical equipment and machinery, means of transport, devices, movables and equipment.

Table 1. Potential availability of particular fractions of municipal wastes in a forecast for 2030, variant min. and max. (Mg)

	Min.	Max.		Min.	Max.
Quantity of Generated Waste	12,000,000.00	15,000,000.00			
Paper and Cardboard	1,363,825.20	1,704,781.50			
Glass	1,205,733.60	1,507,167.00	bio (no paper)	5,089,797.84	6,362,247.30
Metals	271,122.00	338,902.50			
Plastics	1,470,224.40	1,837,780.50			
Multi-Material	417,747.60	522,184.50			
Kitchen and Garden	3,887,817.60	4,859,772.00			
Mineral	503,337.60	629,172.00	including green ones	4,388,341.20	5,485,426.50
<10 mm	1,171,830.00	1,464,787.50			
Textiles	315,392.40	394,240.50			
Wood	50,224.80	62,781.00			
Hazardous	90,266.40	112,833.00			
Other	500,685.60	625,857.00	(raw mat.)	4,310,905.20	5,388,631.50
Large-Dimensions	251,269.20	314,086.50			
Green Areas	500,523.60	625,654.50			

Source: own material based on Szpadt (2010).

At such assumptions, in 2030 Poland will have a resource fraction in quantity between 4.3 a 5.3 M Mg/a (Dz.U. 2016, poz. 1987). Quantity of bio-degradable wastes, which can be produced[7] equals from 5 to 6.3 M Mg/a, from which approx. 4.4 to 5.5 M Mg/a are green wastes.[8] Bio-degradable wastes comprise clothes and textiles and wood – 50%, multi-material packages – 40%, fraction <10 mm – 30% and wastes originating from kitchen and green areas.

Following the hierarchy of proceeding with wastes, as a superior rule of the circular economy, the most substantial way to process already produced municipal wastes is recycling. In 2025 it must equal at least 60% and in 2030 – 65% of produced wastes. This quantity comprises both, material recycling and biologic recycling. Simultaneously, recycling must include post-package wastes at 50% rate in 2020 of produced waste quantity (of this type), and 75% in 2030. Hence, in case of 60% of municipal waste recycling (variant 1.1), recycling will include 7.2–9 M Mg wastes (in case of produced waste accordingly 12 and 15 M Mg). In case of 65% of required recycling (variant 1.2.) it will be, accordingly, 7.8–9.7 M Mg/a. If we assume that recycling must include 50% of post-package wastes it will be accordingly 2.1 and 2.7 M Mg and it means that biologic recycling (or potentially, along with large dimensions wastes) in variant 1.1. it must equal min. 5–6.3 M Mg, and in case of variant 1.2. 5.6–7 Mg. Nevertheless, if recycling of post-package wastes is accepted (following the European Commission) at the 75% level, then it will equal accordingly 3.2–4 M Mg, and recycling of remaining wastes must equal min. 4.5–5.7 M Mg. After including goals regarding recycling, for other processing ways there will be left 4.8–6 M Mg (with assumption of 60% recycling) or 4.2–4.5 M Mg (with assumption of 65% recycling). These estimations have been entered into Table 2.

[7] Bio-degradable wastes comprise clothes and textiles and wood – 50%, multi-material packages – 40%, fraction <10 mm – 30% and wastes originating from kitchen and green areas.

[8] Wastes originating from kitchen and green areas.

Table 2. Quantity goals of circular economy for Poland (Mg/a)

Hierarchy/variants	Processes	Goals of Circular Economy	
		min.	max.
	quantity of waste	12,000,000.00	15,000,000.00
1.1.	recycling of municipal waste – material and biologic (60%)	7,200,000.00	9,000,000.00
1.1.1.	including material recycling (min.) 50% (KPGO 2022)	2,155,452.60	2,694,315.75
	including biologic recycling	5,044,547.40	6,305,684.25
1.1.2.	including material recycling (min.) 75% (KE)	3,233,178.90	4,041,473.63
	including biologic recycling	3,966,821.10	4,958,526.38
1.2.	recycling of municipal waste – material and biologic (65%)	7,800,000.00	9,750,000.00
1.2.1.	including material recycling (min.) 50% (KPGO 2022)	2,155,452.60	2,694,315.75
	including biologic recycling	5,644,547.40	7,055,684.25
1.2.2.	including material recycling (min.) 75% (KE)	3,233,178.90	4,041,473.63
	including biologic recycling	4,566,821.10	5,708,526.38
2.1.	after the recycling (60%)	4,800,000.00	6,000,000.00
2.2.	after the recycling (65%)	4,200,000.00	5,250,000.00
3.	max. to ITPOK (30%)	3,600,000.00	4,500,000.00
4.	max landfill –10%	1,200,000.00	1,500,000.00

Source: own work.

Wastes after the recycling process may be combusted or landfilled but their quantity is reduced. Quantity of wastes and residues after processing of wastes addressed to thermal processing must not exceed 30% of produced wastes' mass. However, wastes and their residues addressed to the landfills must not exceed 10% of produced wastes' mass. In this way maximal quantities of wastes addressed to thermal processing plants may equal 3.6 to 4.5 M Mg, and into landfills – 1.2 – 1.5 M Mg.

Assessment of investment decisions for meeting objectives of circular economy

For proper achieving of goals, investments must be relevantly adjusted in terms of performance and processing way. Till 2014 Poland was characterized by 15.5 M Mg performance of sorting plants, 14.4 M of performance MBP installations and solid waste composting plants (including 9.4 M Mg processing capability of the mechanical part) and RDF combustion performance up to 1.5 M Mg/a and total (completed investments and investments under construction) performance of municipal waste incinerating plants equal 1 M Mg/a. These quantities are set out in Table 3.

In 2015, to the largest extent, MBP installations' performance went down, by nearly 600 thousand Mg and performance of landfills – by more than 400 thousand Mg. Performance of all of the installations, at the end of 2015 equaled 39.4 M Mg/a. At the analyzed period there were also carried out installations for commercial use of municipal waste. In 2015 they managed to increase their performance by 716 thousand Mg, achieving totally 2.3 M Mg/a.

Legitimacy of completed investments must be considered in form of opportunity to perform circular economy's goals adjusted to quantity of manufactured wastes and simultaneous consideration of costs of such investments. This assessment does not include legal barriers and opportunities to obtain wastes limiting performance of particular actions, just potential technical and financial possibilities. Comparing capital expenditures from 2012 to 2015 it could be concluded that the highest average unit costs is shown by incinerating plants, nearly PLN 6000/Mg, while costs

Table 3. Performance of municipal waste treatment plants in Poland till 2015 (Mg/annually)

Installations	KPGO 2022 – to 2014		GUS 2015	Total 2015
Sorting plants mixed	1,840,000.00			
Sorting plant selective	2,840,000.00	15,580,000.00	304,676.00	15,884,676.00
Sorting plant selective + mixed	10,900,000.00			
Mechanical	9,400,000.00			
Biologic	4,100,000.00	14,370,000.00	596,267.00	14,966,267.00
Composting plants	870,000.00			
Cement mills (RDF) can be 1.5 M	1,100,000.00	2,100,000.00	261,930.00	2,361,930.00
Incineration plants	1,000,000.00			
Landfills	5,790,909.09		423,278.00	6,214,187.09
Machinery designed to use municipal waste for economic purposes	–	–	716 531.00	2 350 850.00
Total		32,050,000.00	1,586,151.00	39,427,060.09
Economical waste using				2,350,850.00

Source: own material based on GUS, Environment protection 2009–2016, KPGO 2022 (*Programowanie*..., 2015).

of thermal processing plants is lower – PLN 3.8 thousand/Mg. These are many times more expensive installations than the remaining ones hence, they should be carried out only when no other solutions exist. From among other types of installations the highest costs are shown by landfills – PLN 655/Mg of performance, the cheapest one by solid waste composting plants – PLN 503/Mg of performance. Average cost of other wastes liquidation plants equals approx. PLN 600. Worth of mentioning is that costs of devices designed for industrial use of wastes are lower – averagely PLN 520/Mg. Average unit costs of particular types of installations are shown in Table 4.

Table 4. Average unit costs of installations carried out in Poland from 2012 to 2015

Instalation/proces	Efficiency (Mg/y)	Outlays (th. PLN)	Unit cost (PLN/Mg)
Neutralisation (no composting)	1,573,072.0	941,558.8	599.0
Composting	1,334,033.0	670,907.0	503.0
Combusting	405,448.0	2,399,839.6	5,919.0
Landfills	1,598,897.0	1,047,584.4	655.0
Economy using of waste	2,078,987.0	1,080,883.3	520.0

Source: own material based on GUS' data, Environment protection.

Assuming that in waste sorting plants (collected selectively) 30% of wastes are recycled, and in waste sorting plants (mixed), 30% raw material waste are recovered, Poland, at the end of 2015 had nearly 13.4 M Mg of processing power (effective power). This quantity is increased by approx. 6.5% of processing plants of mechanical part of MBP installation, that is by 600,000 Mg/a. Maximal quantity of produced raw material wastes in Poland in 2030 will equal 5.4 M Mg. Goals to be performed show necessity to recycle materials (2–4 M Mg depending on material). Hence, performed investments show at least double excess in relation to a need.

Bio-degradable waste in 2030 in Poland there will be manufactured maximally at quantity 5–6.3, and green waste – 4.4 – 5.5 M Mg/a. Performance of goals enforces biologic recycling at the 5–6 M Mg level. Power of MBP installations, in biologic part and in composting plants, equals approx. 5 M Mg, from which solid waste composting

plants are characterized by performance equal approx. 1 M Mg/a. This is too small quantity to achieve established goals. In particular, it is necessary to increase installations, which can process green waste and waste originating from kitchens.

Poland may finally incinerate 4.5 M Mg/a and landfilled 1.5 M Mg/a. Temporarily, Poland has landfills which can collect 6.2 M Mg/a in case of assumption that 60–70% of produced waste is landfilled.[9] After deduction of obligatory recycling and landfill that is 10%, still 3–4.5 M Mg/a wastes are to be disposed. Assuming that 30% of power of MBP mechanical part is RDF fuel, then, 3 M Mg of waste can be intended for incineration. Mixed waste incineration plants use the remaining quantity of waste, 1 M Mg/a. Hence, a problem is no installations to incinerate RDF, in quantity approx. 1.5 M Mg/a.

Conclusions

From the previous content it results that selection of erected installations is relatively random. For sure, adjusting them to meet goals of the circular economy is not a key decision when making investment decisions. Also costs efficiency is not taken into account in terms of the macro-economy. Cost optimization is made at the investor level and selection of type of an installation, at the regions level (RIPOK) or a commune level. Such an approach does not warrant effective allocation of public funds and meeting Union's goals, The most frequently, Polish system of municipal waste management is compared to German one and similar solutions are suggested. However, the German system is mature one while Polish system just has been launched. Beginnings of both of the systems were based on other assumptions, hence, their development paths must be different. For sure, Poland needs to use effect of the late start. Nevertheless, it is still taking place to a limited extent. Still solid waste sorting plants and landfills have been developed which is characteristic for undeveloped systems (Ciechelska, 2014), instead of effective investments in a waste liquidation system, not only by means of direct investments.

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IMPACT OF REGIONAL OPERATIONAL PROGRAM FOR WIELKOPOLSKIE VOIVODESHIP 2007–2013 ON INNOVATION OF MICRO, SMALL AND MEDIUM ENTERPRISES IN WIELKOPOLSKA REGION

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ABSTRACT

The micro, small and medium enterprises (SMEs) sector is crucial for the development of an innovative and competitive European Union economy. In each programming period, the EU prepares a number of activities and tools for these companies to improve their market position. The article attempts to assess the impact of the Regional Operational Program for Wielkopolskie Voivodeship 2007–2013 (ROPW) on the innovation level of the SME sector in the region. The evaluation was based on 255 projects implemented by these companies within the ROPW. Research shows that there was little interest in EU funds from Wielkopolska entrepreneurs. However the examined projects were characterized by a high degree of innovation.

Introduction

Both in the 2010 Lisbon Strategy and in the current Europe 2020 Strategy, the European Union (EU) places particular emphasis on increasing the innovation of the SME sector. This sector is crucial for the development of an innovative and competitive economy. The European Commission reports that nearly 20.8 million of SMEs operate in the EU, employing 87.5 million people and creating added value of almost 3.5 bln euros (European Union,

2014, p. 4). As a result, the European Union prepares a wide range of actions and tools for these companies to improve their market position in each programming period. The article attempts to assess the influence of Regional Operational Program for Wielkopolskie Voivodeship 2007–2013 (ROPW) on the level of SME sector innovation in the region. The assessment was made on the basis of an analysis of 255 investment projects implemented by SMEs under the program. It should be emphasized that the final report on the implementation of ROPW unfortunately gives fairly general data on the innovativeness of projects. It is limited to the total number of new and improved products across the range of activities and schemes, and the number of R&D projects (*Sprawozdanie WRPO…*, 2017, pp. 266–274, załącz. IV, Tab. 4). The analysis of the projects allowed for a considerable refinement and supplementation of the indicated results.

Literature review

The subject literature distinguishes the notions of innovation and innovativeness of the company. There are many definitions and types of innovation. Comprehensive review of these issues is given by Kraśnicka (2013) and Sikora and Uziębło (2013). In this article, innovations will be understood in broader terms, in line with the concept adopted by the OECD and Eurostat (Oslo Manual, 2005, pp. 48–58), as this approach has been applied in the SMEs projects under the ROPW. Innovation should be understood as the implementation of a new or significantly improved product (or service) or process, a new marketing method or a new organizational method in economic practice, workplace organization or the environment.

From a technical point of view, the products are also divided into complex and simple. The composite product is a product which consists of many parts which can be replaced in such a way that the product can be dismantled and reassembled (Directive 98/71/EC, Article 1 (c)). Products that do not meet the above characteristics should be considered as simple.

The Oslo Manual adopts three dimensions of diffusion of innovation. The minimum requirement for innovation is to implement a solution at enterprise level. In addition, innovations are on the market and in the world (international) scale.

On the other hand, the innovativeness of the company can be understood as the tendency and the ability of the company to implement innovations (Michalski, 2014, p. 78; Kraśnicka, 2013, pp. 167–168; Pichlak, 2012, p. 36; Nowacki, 2010, p. 30). Research shows that the degree of innovation depends on many factors and conditions both on the business side and on the external environment (Napiórkowski, 2014, pp. 15–16; Wiśniewska, 2014, p. 235; Michalski, 2014; Szopik-Depczyńska, Depczyński, 2012, p. 375). Mikołajczyk (2013, p. 237) also points to innovation factors particularly relevant for SMEs, such as: innovation readiness, employee input, high engagement and initiative, full knowledge of contractors, quick and short decision paths.

The literature gives many measures of the degree of innovation of the organization. A very good overview of these measures is given by Salavou (2004, p. 35). The most commonly used measures are: time needed to implement innovation, dichotomous variable – demonstrates the implementation or non-implementation of innovation, R&D spending, economic value of innovations, the number of innovations adopted by the company from the list of innovations, and subjective measures. The selection of the latter depends on the context of the study.

Method

During the period of the ROPW (2007–2015) the number of registered SMEs in Wielkopolska increased from almost 351,8 to over 409,4 thousand (GUS, online). During this period, SMEs submitted a total of 5661 applications for co-financing of investment projects. A total of 11 competition proceedings were held (*Sprawozdanie WRPO…*, pp. 268–269). The companies implemented 1479 projects, of which 255 (17.2% of the number of implemented projects) were covered by the research in regard with innovation: 164 projects implemented by microcompanies operating on the market for no longer than two years (Action 1.1, Scheme I), 59 projects executed by other SMEs (Action 1.2, Scheme I) and 32 highly worldwide innovative projects (Action 1.2, Scheme III). Table 1 shows the basics of aid under the indicated actions and schemes. The innovativeness of the examined projects was assessed on the basis of several criteria differentiated in cross-sections of activities and schemes (Table 2). These criteria were used during competition proceedings.

Table 1. Criteria for assessing innovativeness of the examined investment projects

Assessment criteria	Score range
1	2
Action 1.1 (Scheme I)	
Technically refined product/service offered by the applicant as a result of the project: – lack of refined product/service – 0 points, – improved product/service – 2 points	0/2
Technically new product/service offered by the applicant as a result of the project: – no new product/service – 0 points, – new product/service – 4 points	0/4
The project includes innovative technological and/or product and/or organizational solutions: – lack of innovation – 0 point, – at the enterprise scale – 1 point, – in the voivodship scale (applied for less than 5 years) – 2 points, – in the country (applied for less than 5 years) – 3 points (points are awarded for the level of innovation of particular elements, the higher level of innovation of a given element eliminates the lower level, the beneficiary can receive a maximum of 9 points)	0–9
The project assumes the use of information and communication technologies (ICTs) in the enterprise	0/2
Action 1.2 (Scheme I)	
Number of new products/services proposed by the applicant resulting from the project. 1. Improved product in terms of technology – 1 point. 2. Technically advanced product – 2 points. 3. New product straight from the technological point of view – 2 points. 4. New technologically complex product – 3 points. 5. No product/service – 0 points. 6. With the introduction of two new and more. 7. The Beneficiary will receive a maximum of 6 points	0–6
The number of new enterprise-level technologies applied by the operator as a result of the project. – 1 enhanced technology – 1 point, – 2 and more upgraded technologies – 2 points, – introduction of 1 new technology – 2 points, – introducing 2 or more new technologies – 3 points, – no new/improved technologies – 0 points. With the introduction of two or more new technologies, the Beneficiary will receive a maximum of 3 points	0–3

1	2
The project includes innovative solutions in terms of technological innovation, process and/or product innovation and/or organization and management, or applied for less than 5 years in the voivodeship or country: – lack of innovation 0 points, – on the scale of the enterprise 2 points, – on the scale of the voivodship 3 points, – in the country scale 4 points (for the innovative solution of each element, the higher level of innovation of a given element eliminates the lower level. The beneficiary can receive a maximum of 12 points)	0–12
The project involves the use of information and communication technologies (ICTs) in the enterprise	0/2
The project involves the use of know-how, knowledge – non patented solutions or patent, license	0/4
As a result of the project implementation, the R&D department will be established or expanded (for own needs)	0/2
Action 1.2 (Scheme III)	
The project assumes the application of new technological solutions applied in the world for a period not exceeding 1 year	0/4
Technically refined product/service offered by the applicant as a result of the project: – lack of refined product/service – 0 points, – improved product/service – 2 points	0/2
Technically new product/service offered by the applicant as a result of the project: – no new product/service – 0 points, – new product/service – 4 points	0/4
The project involves the use of information and communication technologies (ICTs) in the enterprise	0/2
Applicant holds: patent for invention or protection for utility model or the right of registration of an industrial design or the right of registration of topographies of integrated circuits used in a new investment	0/2
The project assumes the use of elements of the R&D performed or purchased by the entrepreneur	0-6

Source: based on WRPO (2015), pp. 5–21.

Results

Subject of the examined projects

Overall, most projects were related to the production of wooden products and furniture, medical practice and printing activities. A dozen projects were implemented in five other sections of Polish Classification of Activities (Figure 1).

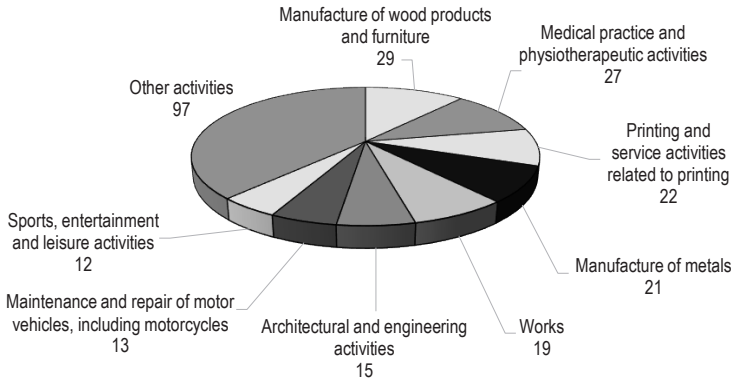


Figure 1. Number of projects included in the survey according to the Polish Classification of Activities

Source: based on the examined projects.

Table 2. Principles of financial assistance of ROPW 2007–2013 under selected actions and schemes

Action and scheme	Subject od assistance	Financial allocation (euro)	Ceiling of eligible costs	Co-financing amount and other restrictions (PLN)
Action 1.1. Scheme I	Purchase of fixed assets and intangible assets	– ERDF (European Regional Development Fund) – 14,220 mln, – state budget – 2,234 mln, – private funds – 11,153 mln	– 60%, – 40% for companies in the transport sector	– minimum amount of funding – 9,000, – maximum amount of funding – 200,000
Action 1.2 Scheme I		– ERDF – 171,470 mln, – state budget – 9,200 mln, – privet funds – 134,487 mln	– 60% for micro and small businesses, – 50% for medium-sized companies, – 40% for companies in the transport sector	Minimum co-financing: – microenterprises (operating for no more than 2 years) – 400,000, – micro- (operating for more than 2 years), small and medium-sized enterprises – 9,000, – microenterprises in rural areas – over 300,000, Maximum amount of funding: – All companies – 1.2 mln
Scheme III	Acquisition and application of new technologies applied in the world for not more than 3 years			Maximum eligible costs – 8 mln, Minimum amount of funding: – all companies – 9,000, – microenterprises in rural areas – over 300,000, Maximum amount of funding: – all companies – 4 mln – transport companies – 3.2 mln
Scheme IV	Purchase of fixed assets and intangible assets under *de minimis aid*		70%	Minimum co-financing: – all companies – over 200,000, – microenterprises in rural areas – over 300,000, Maximum amount of funding: – all companies – 500,000, – companies in the transport sector – 350,000

Source: own elaboration based on: WRPO (2009), pp. 27–51.

In terms of activities and schemes, the classification of projects in regard with the subject was slightly different. Within the framework of activity 1.1, there were mainly projects of medical practice (22 projects), including dental practice (9 projects). Within the action 1.2, scheme I the projects mainly concerned the production of furniture and wooden products (17 projects). Among the most technologically advanced projects (activity 1.2, scheme III), printing and printing services (8 projects) and plastics (6 projects) were dominant.

New and improved products

Companies have introduced 667 new and improved products and services. On average, there were 2.6 products per project. Most of the products were introduced by micro-enterprises operating on the market for no longer than two years (Table 3). Companies implementing projects under measure 1.2, scheme I introduced 173 products, and companies performing the most technologically advanced projects – 91 products. The research also shows that more services than products were introduced to the market, with more new ones than improved ones.

Table 3. Number of products placed on the market by the examined projects

Action/scheme	Improved product	New product	Improved service	New service	Total
1.1 (Schemet I)	17	48	119	219	403
1.2 (Scheme I)	31	86	9	47	173
1.2 (Scheme III)	44	25	16	6	91
Total	92	159	144	272	667

Source: based on the examined projects.

For projects implemented under Action 1.2, scheme I, it was able to distinguish between complex and simple products (Table 2). The obtained data show that for 173 products only four were simple, including three new products and one improved product. New simple products were noted in the carpentry project, and the improved product was improved in the construction industry. In contrast, the projects under study did not include simple services.

Diffusion of innovation

The examined projects were evaluated from the point of view of the type and scope of applied innovations, but the projects implemented under scheme III were only assessed from the point of view of technological innovation. It was necessary to apply innovation that exists in a global scale for no longer than a year. Applicants were obliged to attach the special innovation opinion from a relevant scientific or research institution. Table 4 shows the breakdown of the number of examined projects by type and extent of innovation.

Table 4. Breakdown of the total number of examined projects from the perspective of innovative solutions

Innovation	Product	Process	Organizational	Total
Company (scheme I)	93	11	169	273
Region (scheme I)	17	10	7	34
State (scheme I)	113	202	47	362
World (scheme III)	–	32	–	32
Total	223	255	223	669

Source: based on the examined projects.

The table shows that the projects implemented under Scheme I were mainly characterized by technological and product innovativeness at national level, while by organizational level – at enterprise level. Significant differences in innovativeness are seen, however, between the projects implemented under Action 1.1 and Action 1.2. In the first group there was a strong correlation between product and process innovations. The application of innovative technology at national level enabled the introduction of innovative products on a national, regional and enterprise scale. Technological innovation at the regional level has generally translated into regional product innovation. Only one project, under Action 1.1 and in clothing production, recorded an innovative product at the company level, but no innovation products were produced nationally. Finally, innovative technology at the enterprise level has enabled innovative products to be created mostly at the scale of the enterprise. Only one project, under Action 1.1 and in

medical device production, was reported, where the application of innovative technology at the enterprise level enabled the launch of an innovative product on a regional scale.

The overwhelming organizational innovation at the enterprise level can be justified by the fact that the examined projects were implemented by the relatively new micro-enterprises. These were often single operators, had no extensive organizational structure and did not report the need for advanced organizational and management methods. Only three examined projects included organizational solutions at national level (conservation services, printing and building services) and one at regional level (non-contact car wash). For the projects implemented under Action 1.2, Scheme I, there was a close link between technological, product and organizational innovation at national level. Of the 59 projects covered by the survey, 47 were characterized by product innovation at national level, 52 – by technological innovation at national level, and 44 – by organizational innovation at this level. Organizational innovation is due to the fact that in this group of applicants were small and medium-sized businesses, which due to their scale of activity needed more advanced and innovative solutions in terms of management, production organization, sales and marketing.

The research projects also confirm the close relationship between product innovation and technology in terms of the degree of their advancement (novelty or improvement). Only in one project (in the construction industry) the application of two upgraded technologies at the regional level contributed to the creation of three new complex services at this level. In the case of other projects, new technologies have contributed to the emergence of new or improved products, and improved technologies – only for improved products. Taking into account the number of technologies, there were 120 new technologies and 6 improved technologies in 59 projects.

Other measures of innovation

The innovation of the projects was measured by additional criteria, which varied in cross-sections of activities and schemes (Table 5). The following table shows the number of projects that provide additional solutions for the innovativeness of projects and their implementing companies.

Table 5. Number of projects containing additional innovative solutions

Measures of innovation	Action 1.1	Action 1.2 (Scheme I)	Action 1.2 (Scheme III)	Total
Use of ICT	164	59	32	255
Application of know-how, knowledge – non patented or patent, license	–	52	–	52
Creation or extension of own R&D department	–	14	–	14
Applicant holds: patent for invention or protection for utility model or the right of registration of an industrial design or the right of registration of topographies of integrated circuits used in a new investment	–	–	19	19
The project assumes the use of elements of the R&D performed or purchased by the entrepreneur	–	–	30	30

Source: based on the examined projects.

Table 5 shows that all the projects under investigation assumed the use of ICT. In the vast majority of projects it was the purchase and installation of computer software for accounting and design. Due to the high frequency of ICT changes in the market, this software has always been the latest. Most of the projects implemented under Action 1.2, Scheme I, were planned for the use of intangible assets indicated in Table 5, but it should be emphasized

that the entrepreneurs to meet this criterion and get additional points often used the licenses sold together with computer software. It is also worth emphasizing that in several projects entrepreneurs have skillfully described the way they use non-patented knowledge (know-how). On the other hand, in relatively few projects entrepreneurs planned to create a R&D department for their own needs. This was due to the fact that the creation of the R&D department was associated with higher costs and the employment of additional people in the research facilities. In most of the high innovative projects, the use of patents and protection rights was planned, and almost all projects assumed the purchase or use own R&D results.

Conclusions

The paper analyzes the innovativeness of a selected group of projects implemented by SMEs within the framework of the ROPW 2007–2013. The degree of innovation was assessed on the basis of selected criteria used in the competition procedures. These criteria very well reflect the measures commonly recommended in the literature of the subject.

The number of registered SMEs in Wielkopolska and the number of applications for co-financing show, however, that entrepreneurs were not particularly interested in EU grants. Taking into account the average number of registered companies in the years 2007–2015 (slightly over 360.6 thousand), applications were submitted by less than 1.5% of these companies, and the projects realized – 0.4%. The analyzed program did not significantly influence the degree of innovation of the whole sector of SMEs in Wielkopolska region. There are a number of reasons for poor interest in grants, although no further research has been done in this area. Formal restrictions (such as lack of arrears in taxes and social security contributions, exclusion from any court proceedings), small amounts of funding, reimbursement rules, or maintenance of the project's sustainability for 3 years are indicated.

On the other hand, the degree of innovation of the projects included in the survey has to be considered as high. Entrepreneurs launched 667 products, most of which were new services and products. Although only Action 1.2 (Scheme I) has formally distinguished simple and complex products, yet in other activities and schemes we also deal mainly with complex products.

More than half of the projects were characterized by innovative solutions at national level. Technological and product innovation were predominant. Organizational innovation dominated at enterprise-level solutions. The research also confirmed the close dependence of product innovation on technological innovation. The vast majority of projects implemented within the framework of actions and schemes met satisfactorily additional criteria of innovation (ICT, intangible assets, R&D).

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SUSTAINABLE DEVELOPMENT OF PROVINCES IN POLAND IN THE YEARS 2005–2016

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ABSTRACT

In Poland, the need to implement regional policy by local government units in accordance with sustainable development principles results directly from the rules of law. Taking into account specific environmental and economic conditions in individual regions, local authorities, having the right to give preference to different aspects of socio-economic development when creating regional strategies of regional development, are obliged to implement the concept of sustainable development in those strategies. The aim of the article is to specify the degree of changes in the level of sustainable development in individual provinces in Poland in the years 2005–2016 in general and in the area of social, economic, environmental as well as institutional and political order.

Introduction – The importance of the sustainable development policy in Poland

The notion of sustainable development was first defined in the UN document entitled "Our Common Future" in 1987. It states that sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987, p. 16). The obligation to follow the balanced and sustainable development principle in Poland results primarily from the Constitution of the

Republic of Poland (CRP, 1997) which states in chapter I, article 5 that: The Republic of Poland shall safeguard the independence and integrity of its territory and ensure the freedoms and rights of persons and citizens, the security of the citizens, safeguard the national heritage and shall ensure the protection of the natural environment pursuant to the principles of sustainable development. However, the notion of "sustainable development" was defined in article 3 of the Environmental Protection Act (Act, 2001), which states that sustainable development shall mean such socio-economic development which integrates political, economic and social actions, while preserving the natural equilibrium and the sustainability of basic natural processes, with the aim of guaranteeing the ability of individual communities or citizens, of both the present and the future generations, to satisfy their basic needs. The importance of sustainable development was also underlined in art. 77, which provides that: The issues of environmental protection and sustainable development shall be covered in the basic curricula of general education for all types of schools. This obligation shall also apply to the organisers of training courses leading to the acquisition of vocational skills. However, article 405 states that the resources of the National Fund, the Voivodship Funds and Gmina Funds shall be allocated to finance environmental protection and water management with the aim of implementing the principle of sustainable development.

The role and importance of local government units in the process of planning and controlling the implementation of sustainable development principles in the area of individual provinces was stressed in the Spatial Planning and Spatial Development Act (Act, 2003). Article 1.1 of the Act specifies the principles of spatial policy to be followed by local government units and central government administration as well as the scope and manner of proceedings in matters of designating land for specific purposes and determining the principles of its development and buildup, adopting spatial order and sustainable development as the foundations for these activities. In the process of building regional strategies, implementing the concept of sustainable development, a specific challenge consists in building development plans, taking into consideration uneven distribution of economic, social and environmental factors, which decide about attractiveness of individual areas being part of the regions as well as uneven level of development of these areas. In general, regions build their own development strategies, allowing economic aspects to be developmental priorities in some areas of the region, whereas in other areas – the social or environmental ones (Czarnecka, Słocińska, Dunay, Kabukcu, 2017, p. 265).

The aim of the conducted study is to specify the degree of changes in the level of sustainable development in individual provinces in Poland in the years 2005–2016 in general as well as in the area of social, economic, environmental as well as institutional and political order.

Source of data and research methodology

The study of sustainable development level in individual provinces in Poland will be conducted in four areas: in the area of social, economic, environmental as well as institutional and political order. Taking into account data availability and substantive requirements related to variables in such types of studies, the set of diagnostic variables includes the following features:

a) in the area of social order – the number of physicians licensed to practise the profession per 10 thousand inhabitants (X_1), the number of passenger cars per 1,000 inhabitants (X_2), the number of adults participating in education and training (X_3), the average monthly disposable income per capita in a household (X_4), population growth rate per 1,000 population (X_5), unemployment rate (LFS) (X_6), the share of children

in pre-school education in the general number of children aged 3–5 years (X_7) and the number of infant deaths per 1,000 live births (X_8);

b) in the area of economic order – the length of railway lines exploited per 100 km^2 (X_9), investment outlays by sectors per capita (current prices) (X_{10}), outlays on research and development activity as a share of GDP (X_{11}) and the use of mineral fertilisers per 1 ha of agricultural area (X_{12});

c) in the area of environmental order – carbon dioxide emissions from particularly onerous plants (X_{13} – mln t); forest cover (X_{14}), selectively collected municipal waste in relation to the total municipal waste collected during a year (X_{15}), the share of renewable electricity production in total enegy production (X_{16}), the share of areas under legal protection in the total area (X_{17}) and electricity consumption per 1 million PLN of GDP (X_{18});

d) in the area of institutional and political order – the number of registered foundations, associations and social organisations per 10 thousand inhabitants (X_{19}), the share of investment expenditures of local government units in total expenditures (X_{20}) and revenues from environmental fees and other revenues for environmental protection and water management funds per capita (X_{21}).

The information concerning the values of the above variables in individual provinces in Poland in the years 2005–2016 was obtained from the website http://wskaznikizrp.stat.gov.pl/ (access 29.04.2018), but on account of the lack of information related to the outlays on research and development activity as a share of GDP (X_{11}) and electricity consumption per 1 million PLN of GDP (X_{18}) in 2016, their value was assumed to be the same as in 2015.

Following the choice of diagnostic variables, the construction of synthetic development measure involves the following steps:

1. the unification of the variables being the subject of aggregation, with the use of the postulate of uniform preference of variables as well as the unification of orders of magnitude of individual variables with the aim to make them comparable. In addition to the choice of the appropriate normalization formula, it is equally important to choose normalization parameters that are present in this formula. In this scope, depending on the purpose of the conducted study, the author can use formulas with constant or variable normalization parameters (Frodyma, Pawełek, 2008, p. 36). On account of the adopted objective of the study, diagnostic variables were normalized on the basis of constant normalization parameters in accordance with the following formulas:
   – in the case of stimulants:

$$z_{ij} = \frac{x_{ijt}}{\max\limits_{\substack{i=1,\ldots,16 \\ t=1,\ldots,12}} \{x_{ijt}\}} \tag{1}$$

   – in the case of destimulants:

$$z_{ij} = \frac{\min\limits_{\substack{i=1,\ldots,16 \\ t=1,\ldots,12}} \{x_{ijt}\}}{x_{ijt}} \tag{2}$$

Based on the analysis of the desired direction of changes of the sustainable development indicators adopted in the study, it was assumed that variables of the character of destimulants are the following ones: X_2, X_6, X_8, X_{12}, X_{13}, X_{18} and X_{21}, whereas all other variables will be treated as stimulants.

2. Weighting the normalized diagnostic features, which means assigning weights to individual variables which specify their importance for the general criterion in comparison with other features. Adopting the assumption of the equal importance of sustainable development in all of the analysed areas for the general sustainable development of the given area, and taking into consideration a different number of variables describing individual areas, it was assumed that in the case of variables describing social order their weight amounts to $w_j = 1/32$, in the area of economic order – $w_j = 1/16$, in the area of environmental order – $w_j = 1/24$, whereas in the area of institutional and political order – $w_j = 1/12$.
3. The choice of aggregation formula and determination, on its basis, of the value of the synthetic development measure. In this scope, the author will use the TOPSIS method (*technique for order preference by similarity to ideal solution*) (Hwang, Yoon, 1981, pp. 130–132), which states that the ranking of objects is created based on C_i values designated according to the following formula:

$$C_i = \frac{d_i^-}{d_i^+ + d_i^-} \tag{3}$$

where:

$$d_i^+ = \sqrt{\sum_{j=1}^{21} w_j \left(z_{ij} - z_0^+\right)^2}, \ \text{i = 1, ..., 16}$$

$$d_i^- = \sqrt{\sum_{j=1}^{21} w_j \left(z_{ij} - z_0^-\right)^2}, \ \text{i = 1, ..., 16} \tag{4}$$

$$z_0^+ = \begin{cases} \max\limits_i z_{ij} & \text{in the case of stimulants} \\ \min\limits_i z_{ij} & \text{in the case of destimulants} \end{cases}$$

$$z_0^- = \begin{cases} \max\limits_i z_{ij} & \text{in the case of stimulants} \\ \min\limits_i z_{ij} & \text{in the case of destimulants} \end{cases} \tag{5}$$

On the basis of the Kendall's tau coefficient (r), the author will assess the significance of the changes in positions of individual provinces in the ranking of sustainable development level during the period under analysis. The said coefficient has values in the range <–1, 1>, where 1 refers to perfect agreement, 0 means that two random variables are independent, whereas the value –1 stands for perfect disagreement. The Kendall's tau rank correlation coefficient is used to verify the hypothesis about ranks agreement, for which test statistics defined as:

$$Z_\tau = \frac{\tau}{\sqrt{\frac{2(2n+5)}{9n(n-1)}}} \tag{6}$$

for $n > 10$ has asymptotic normal distribution (Abdi, 2007, pP. 508–510) (in the case of the study of socio-economic development of provinces in Poland $n = 16$).

Results of the study

The initial analysis of diagnostic variables adopted in the study indicates significant changes in their values during the period under study. The most significant changes were observed among others in the case of the share of selectively collected municipal waste X_{15}, whose average level increased almost sixteen times, whereas the median value almost twenty seven times. Even higher increase in the median value (M) was observed in the analysed period in the case of the share of areas under legal protection (X_{17} – 5286% increase), the share of renewable electricity production in total enegy production (X_{16} – 6542% increase), the number of registered foundations, associations and social organisations per 10 thousand inhabitants (X_{19} – 6616% increase) as well as in the case of revenues from environmental fees and other revenues for environmental protection and water management funds per capita (X_{21} – 18213% increase). Detailed information concerning the changes in the values of variables adopted in the study is presented in Table 1.

Table 1. Basic statistics describing values of the selected diagnostic variables in individual provinces in the years 2005 and 2016

	Mean		Median		Min.		Max.	
	2005	2016	2005	2016	2005	2016	2005	2016
X_1	31.250	35.563	34.50	37.50	20.00	25.00	45.00	49.00
X_2	316.060	555.819	408.80	548.85	263.30	485.20	374.20	626.60
X_3	4.506	3.406	4.40	3.05	3.40	2.00	5.90	5.80
X_4	678.503	1,433.310	1,014.58	1,421.65	619.02	1,134.10	801.08	1,780.88
X_5	–1.860	–0.406	1.53	–0.60	–3.40	–3.00	2.20	2.00
X_6	16.191	6.481	6.60	5.65	14.30	4.70	22.80	9.60
X_7	35.029	79.725	46.20	79.05	29.50	70.70	59.40	88.00
X_8	5.381	4.169	5.45	4.15	4.90	3.30	7.40	5.90
X_9	6.724	6.575	6.90	6.25	3.40	3.20	17.20	15.90
X_{10}	2,788.763	5,812.875	4,987.25	5,501.50	1,992.00	3,505.00	5,634.00	10,533.00
X_{11}	0.385	0.788	0.30	0.71	0.08	0.22	1.10	1.74
X_{12}	76.784	122.422	127.40	116.83	66.10	62.98	141.80	201.54
X_{13}	8.062	13.089	3.43	9.63	1.49	1.58	40.12	40.12
X_{14}	16.427	30.256	13.92	29.25	20.70	21.40	48.70	49.30
X_{15}	1.552	24.200	0.87	24.10	1.80	16.90	6.20	34.70
X_{16}	6.254	27.256	0.30	19.70	0.20	3.90	40.10	83.70
X_{17}	10.776	33.586	0.59	31.65	16.40	18.63	61.95	64.63
X_{18}	0.332	0.091	0.43	0.09	0.09	0.06	0.60	0.13
X_{19}	3.719	36.375	0.54	36.50	16.00	27.00	26.00	46.00
X_{20}	3.099	11.669	0.69	11.60	14.30	8.80	20.10	13.60
X_{21}	5.589	68.369	0.32	58.15	13.40	36.20	53.30	152.50

Source: author's own elaboration.

On the basis of the information from Table 1, it can be stated that the major changes in values of the analysed variables were observed in the area of environmental as well as institutional and political order. However, they did not result in significant changes in the rankings of sustainable development level of individual provinces in these areas. In the area of environmental order in the analysed period of 12 years, the leader of sustainable development

was always Warmia-Masuria Province, whereas Łódź Province practically always took the last place (see Table 2). In turn, far greater changes related to sustainable development were observed in the area of institutional and political order. The most positive change in this area was reported in Lower Silesia Province, which in 2005 took 14th position in the ranking, whereas in 2015 – 2nd position, and in Mazovia Province, which in the same period climbed from 9th position to a leading one. In both cases, the key element was the increase in the number of registered foundations per 10 thousand inhabitants (in the case of Lower Silesia Province from 21 to 40 and in Mazovia Province from 26 to 46). In case of the analysis of institutional and political order, particularly interesting were considerable changes in the positions of West Pomeranian Province, which in 2007 took 16th place, in 2012 climbed to 6th place and in 2016 finally took 11th place, as well as of Lubuskie Province, which had 3rd position in 2009 in the ranking of provinces and in 2013 it fell to 15th position. Table 3 provides detailed information on the positions in the ranking of sustainable development in the area of institutional and political order.

Table 2. The ranking of provinces in Poland in terms of sustainable development in the area of environmental order in the years 2005–2016

Provinces	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Łódź (ŁD)	16	16	16	16	16	16	16	16	16	14	15	16
Masovian (MS)	11	11	10	9	9	9	9	9	9	10	10	10
Lesser Poland (LP)	6	7	8	8	8	7	8	8	8	8	8	8
Silesian (SL)	14	13	13	14	14	14	13	14	14	13	12	11
Lublin (LU)	12	12	11	12	12	12	12	12	12	12	14	13
Subcarpathian (SC)	4	4	4	4	4	4	4	4	4	4	4	4
Podlasie (PL)	3	3	3	3	2	2	2	2	2	2	2	2
Świętokrzyskie (ŚK)	5	5	5	5	5	6	6	6	6	6	6	6
Lubusz(LB)	2	2	2	2	3	3	3	3	3	3	3	3
Greater Poland (GP)	10	10	12	10	10	10	11	10	11	11	11	12
Western Pomeranian (WP)	9	9	9	11	11	11	10	11	10	9	9	9
Lower Silesia (LS)	15	14	14	13	13	13	14	13	13	16	16	15
Opole (OP)	13	15	15	15	15	15	15	15	15	15	13	14
Kuyavian-Pomeranin (KP)	7	6	6	6	7	5	5	5	5	5	5	7
Pomeranian(PM)	8	8	7	7	6	8	7	7	7	7	7	5
Warmian-Masurian (WM)	1	1	1	1	1	1	1	1	1	1	1	1

Source: author's own elaboration.

Table 3. The ranking of provinces in Poland in terms of sustainable development in the area of institutional and political order in the years 2005–2016

Provinces	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	2	3	4	5	6	7	8	9	10	11	12	13
Łódź (ŁD)	15	16	14	13	12	15	15	14	15	13	12	13
Masovian (MS)	9	8	7	5	6	6	8	4	3	5	5	1
Lesser Poland (LP)	8	9	8	8	11	10	9	10	9	8	9	10
Silesian (SL)	13	15	15	16	16	16	16	15	13	12	15	16
Lublin (LU)	4	4	4	4	5	5	5	7	5	3	4	7

1	2	3	4	5	6	7	8	9	10	11	12	13
Subcarpathian (SC)	3	2	2	1	2	2	3	8	4	4	3	8
Podlasie (PL)	1	1	1	2	1	1	1	1	1	2	2	5
Świętokrzyskie (ŚK)	6	7	10	14	10	7	11	9	10	10	10	14
Lubusz(LB)	5	5	5	7	3	4	12	13	7	15	11	4
Greater Poland (GP)	11	11	9	9	7	9	6	12	11	11	13	9
Western Pomeranian (WP)	12	14	16	12	13	12	7	6	12	9	7	11
Lower Silesia (LS)	14	13	12	10	8	11	10	5	8	6	6	2
Opole (OP)	10	10	11	15	14	14	14	16	16	16	16	12
Kuyavian-Pomeranin (KP)	16	12	13	11	15	13	13	11	14	14	14	15
Pomeranian(PM)	7	6	6	6	9	8	4	2	6	7	8	6
Warmian-Masurian (WM)	2	3	3	3	4	3	2	3	2	1	1	3

Source: author's own elaboration.

Pomorskie Province was a leader in the ranking of sustainable development in the area of social order for a continuous period from 2005 to 2016, whereas two last positions in this scope were occupied alternately by Łódź Province and Świętokrzyskie Province. The greatest change in this area was reported in Warmia-Masuria Province, which took the third position in 2006, whereas in 2016 it fell to the thirteenth one. The main reason may be the lack of changes in this period in the number of infant deaths per 1,000 live births. In this scope, Warmia-Masuria Province took 5th position with the general average decline in this rate from 6 in 2006 to 4.2 in 2016 (the decline in this rate was reported in all other provinces, including among others in Silesian Province from 7.3 to 4.4, in Lower Silesia Province from 6.9 to 3.8 and in Lublin Province from 6.4 to 3.5). In the area of economic order, the high level of sustainable development compared to other provinces was observed in Mazovia Province, Małopolskie and Silesian Province, which always took first four positions in the said period. In this respect, the weakest provinces turned out to be Kujawsko-Pomorskie Province, Warmia-Masuria Province and West Pomeranian Province, which took the positions between 10 and 16 in this period. Table 4 and table 5 provide detailed information on the positions of provinces in the ranking of sustainable development in the area of social and economic order.

Table 4. The ranking of provinces in Poland in terms of sustainable development in the area of social order in the years 2005–2016

Provinces	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	2	3	4	5	6	7	8	9	10	11	12	13
Łódź (ŁD)	16	16	16	16	16	15	15	16	15	15	15	15
Masovian (MS)	9	7	3	5	4	3	2	2	2	2	2	2
Lesser Poland (LP)	3	4	4	3	3	4	4	3	3	3	3	3
Silesian (SL)	14	11	11	11	11	11	12	12	11	13	13	12
Lublin (LU)	11	10	12	13	12	13	13	10	12	12	12	11
Subcarpathian (SC)	6	6	7	7	7	7	6	5	5	7	5	7
Podlasie (PL)	10	12	10	10	10	10	9	9	10	10	9	6
Świętokrzyskie (ŚK)	15	15	15	15	15	16	16	15	16	16	16	16
Lubusz(LB)	7	5	6	6	6	6	7	6	7	6	7	5
Greater Poland (GP)	2	2	2	2	2	2	3	4	4	4	4	4
Western Pomeranian (WP)	5	8	8	9	8	9	10	11	9	9	10	10

1	2	3	4	5	6	7	8	9	10	11	12	13
Lower Silesia (LS)	12	13	13	12	13	12	11	13	13	11	11	8
Opole (OP)	13	14	14	14	14	14	14	14	14	14	14	14
Kuyavian-Pomeranin (KP)	8	9	9	8	9	8	8	8	6	8	6	9
Pomeranian(PM)	1	1	1	1	1	1	1	1	1	1	1	1
Warmian-Masurian (WM)	4	3	5	4	5	5	5	7	8	5	8	13

Source: author's own elaboration.

Table 5. The ranking of provinces in Poland in terms of sustainable development in the area of economic order in the years 2005–2016

Provinces	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Łódź (ŁD)	8	7	7	8	9	9	9	7	7	8	10	12
Masovian (MS)	2	3	3	2	3	3	4	4	2	1	1	1
Lesser Poland (LP)	3	2	2	3	2	1	3	1	1	2	2	2
Silesian (SL)	1	1	1	1	1	2	1	3	3	4	4	4
Lublin (LU)	11	14	10	12	10	11	12	9	12	7	7	8
Subcarpathian (SC)	5	4	4	4	4	4	2	2	4	3	3	3
Podlasie (PL)	15	10	11	10	13	15	11	13	8	10	8	10
Świętokrzyskie (ŚK)	10	15	14	9	7	5	7	10	14	13	12	11
Lubusz(LB)	14	12	12	15	14	7	8	12	15	12	14	13
Greater Poland (GP)	6	8	8	7	8	10	10	8	9	9	9	9
Western Pomeranian (WP)	16	13	15	13	15	16	15	16	11	14	15	16
Lower Silesia (LS)	4	5	5	6	6	6	5	6	6	6	6	6
Opole (OP)	9	9	9	11	12	13	14	14	13	11	11	7
Kuyavian-Pomeranin (KP)	12	11	13	14	11	14	16	15	16	16	16	15
Pomeranian(PM)	7	6	6	5	5	8	6	5	5	5	5	5
Warmian-Masurian (WM)	13	16	16	16	16	12	13	11	10	15	13	14

Source: author's own elaboration.

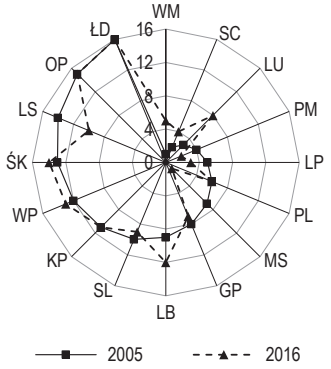


Figure 1. Positions of provinces in Poland in terms of the level of sustainable development in 2005 and 2016

Source: author's own elaboration.

However, the changes observed in terms of sustainable development in respective areas were not reflected in statistically significant changes in the general ranking of sustainable development of provinces in the years 2005–2016. The value of the Kendall's tau coefficient, comparing the order of provinces in 2005 and in 2016, amounted to 0.65, which means that it is statistically significant for p-value = 4.45E-4 and, therefore, there is no reason to reject the hypothesis about non-significant changes in the ranking of sustainable development of provinces in Poland in both years under comparison. Figure 1 shows a graphic presentation of the changes in the positions in the said rankings.

Conclusions

On the basis of the conducted study, the author can draw the following conclusions:

1. Despite considerable and mainly positive changes in the values of diagnostic variables adopted in the study during twelve analysed years, no significant changes were observed in the positions of individual provinces in Poland in the rankings evaluating the level of sustainable development. This may mean that, in general, provinces develop equally in this respect.
2. In turn, the analysis of four distinguished areas of sustainable development in individual provinces leads to two following conclusions: firstly – there are considerable differences in the rankings for the same period (e.g. for 2016, the value of the Kendall's tau coefficient for the ranking of sustainable development in the area of social and economic order amounted to 0.2, which means that it is not statistically significant at the level p-value = 0.2799). This may result from specific political-social-economic-environmental conditions in individual provinces (e.g. in Silesian Province and Warmia–Masuria Province). Secondly – there are major changes in individual subrankings in the period of e.g. two or three years. This may mean a great influence of individual diagnostic variables on the final result, arising from either significant changes in the values of these variables within a short period of time, or from their too much impact due to a small number of the set of diagnostic variables adopted in the study.

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SERVICES PROVIDED BY THE NATIONAL ARCHIVES IN PARIS (PIERREFFITE-SUR-SEINE) AND THE DEMANDS OF XXI CENTURY

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ABSTRACT The aim of the article is the analysis of the services provided by the contemporary archival institution taking as an example the National Archives in Paris. This institution could be considered exemplary for archives in Poland. The article enumerate the main available archival services which are essentials for consultation and elaboration of the archival resources, quicker access to them, public availability and other facilities like the possibility of making specialized reprographics.

Introduction

The Archives are the institution which gather, store and share the archival resources. They are situated in the building equipped with technical standards, adapted for safe storing of the materials. The role of the archives as storing sources institution important for the history of every nation is essential for the society. The XXI century and the social transformations bring the changes in the functioning of the archives. Firstly, the public institutions become

nowadays the service providers for the citizens as part of the informative society where the information is a product and the area of services is strongly developed.

The Archives stopped to serve only the scientists, qualified users who are adapted to work individually there (searching and reading the sources). Today, we are the witnesses of new role of the Archives. They become the service institution which provide services for strictly defined client. They require good management, professional approach and strategic planning (Jabłońska, 2014, p. 9). The Archives functions passes from the passive to active. Their basic functions as gathering, storing and elaborating the sources constitute the internal tasks. Sharing of the resources, the last of their functions become the essential service. Nowadays, the Archives get also other roles: assisting in the research, decrypting the sources, explaining and even understanding the archival materials, like also encouraging people to use new and unexplored area of knowledge. The process of democratization of Archives takes place which means that they become disponible for everyone without previous specialized preparation to work there, people's interests, age or profession. The profile of people using or interested in archives has changed through times. The contribution of the scientists decreased significantly in the last ten years. The "normal" citizens who search for the traces of their ancestors or the information from the family's past are dominants (Kwiatkowska, Jabłońska, 2017, p. 264). The definition of the archive user changes.

The internet, which is now the most important communication means plays the crucial role in this process. IT technics are the tools used for creating the information on large scale in the archival institution. Thanks to them, the work is more accessible and quicker. The development of the informative society simplifies the evolution of the services related to internet- transferring, processing and storing of the information. In Poland, this process is very slow. It's mostly due to the fact that archives are not sufficiently financed by the government (archives as part of public finance sector). They received too few funds for their maintenance and activity. In result, the building is not renovated, new standardized UE equipment is missing and in fact there is a difficulty in accomplishing their basic functions. The financial aspect constitute a major obstacle for efficient adaptation of polish archives to a place equipped with modern technics facilitating the scientific work which would significantly cut the time of many procedures related to reservation of the materials.

In other words, the polish archives are far from the standards and functioning offered in the archives in other European cities. The example of perfect organization and sharing of the materials and advanced exploiting of modern technics in providing archival services is the National Archives in Paris. They are adapting perfectly to the changing reality of XXI century. The article describes particularly one of three buildings of the *Archives Nationales* which is situated in Pierrffite-sur-Seine (59, rue Guynemer), in the suburbs of Paris.

History and the role of the institution today

The National Archives in Paris was created 12 September 1790 by National Constituent Assembly. The role of the institution was described in the rulings from 12 brumaire year II (2 November 1793) and 7 thermidor year II (25 July 1794). All the citizens had full access to them (Branda, Pinaud, Zacharie, 2008, p. 28). At that time, the formulated principle of the public archives made the institution public, open and freely accessible. With time, this principle started to function also in other countries. From the beginning of the existence of the Archives, the legislators were convinced of their importance. In 1800, Napoleon placed them in *Hôtel de Soubise,* located in the center of Paris, in the district Marais. Today, the building is the museum where the most precious documents are stored. In 1927, the Archives were moved to *Hôtel de Rohan,* the building in baroque style. In 1972, the part

of the materials, (in particular the ones of ministries) were moved to Fontaineblau. As the volume of the resources became significant, in 1988, new building Caran (*centre d'accueil et de recherche des Archives Nationales*) was constructed near *Hôtel de Rohan.* After certain time, that building also became insufficient and because of the location in Fontainebleau, the access to Archives was limited. In 2004, with the support of the president of the French Republic, Jacques Chirac and the prime minister Lionel Jospin, the building in Pierrefitte-sur-Seine was chosen as the new seat of the Archives. It's well communicated with the city center. It's a place located near the underground terminus station of the line 13 (Saint-Denis-Université), very close to the University Saint- Denis. This very modern building is an archival center of Europe. The building is designed by the architect Massimiliano Fukas. It was opened in 11 February 2013 by the president François Hollande (*Histoire*…, 2018). We should underline the fact that the governmental authorities and presidents take a lot of care of the Archives which are principal institution for maintaining the national identity. The building in Pierreffite-sur-Seine (Figure 1) gathered all the documents which were dispersed earlier in many places. The project realized the national ambitions to create *Grand Paris*, promoting the public access and the cultural democratization (Pierreffite…, 2018). The building has 66 000 m^2 of usable area from which 5,400 m^2 is for public use and 320 km is of storing areas. In the building, the sources are stored starting from the year 1790.[1]



Figure 1. The main entrance to the National Archives in Pierreffite-sur-Seine

Source: personal resource.

The process of sources sharing

The National Archives are open for everyone. We can meet there people who come for scientific purpose, the students as well as the passionate historians and those who search for their family roots. The first tool to use to start the research is the French internet website (http://www.archives-nationales.culture.gouv.fr/) translated into English and Spanish. We can find there all the basic information and plunge into 24,000 inventories in electronical version (search our catalogue, the online catalogue option). For more professional research, there are advanced

[1] In *Rohan-Soubise*, there are materials before the year 1790 (*Ancien Régime*) and the notarial materials. In Fontainebleau, the electronic and audiovisual materials are stored.

browsers which facilitates and shorten its time. This part can be done from home and on the spot, users can plainly concentrate on the work with the source itself. New inventories are constantly registered in the electronical database. They are precise and they contain the descriptions of the respective sources. This is practical for the users outside France who can prepare for the source consultation before their arriving to the country. Inventories could be downloaded directly from the website. The user card is free after creating the account online. After the registration, the users can freely command the documents on their internet account. The user profile facilitates the research like saving found information (save search results option). This system doesn't function in any polish archive. It is comfortable and it permit to plan especially the distance work. However, the visit in the archives is inevitable because the system online doesn't contain all the information. The researchers can use *des salle des inventaires* where there are inventories in paper version and other tools like dictionaries or research papers helping to elaborate the sources. In the archives reading rooms, there are computer stands where the users can book the documents. In case of any difficulty related to reservation, they can always ask the employees for assistance. The daily limit of booked documents is 5 boxes. There is no limit for microfilms disponible in other reading room. They can be found in open drawers freely accessible. The materials can be booked any time during the day and the average time of waiting is 40 minutes. There is only one inconvenience that the employees of the reading rooms lack of specific archival knowledge in comparison to polish ones who are qualified historians. The employees in France are only able to indicate the inventories and assist in general research. The specialists work directly on conservation and storing of the sources. Then, the individual archival knowledge of the user needs to be in use together with the tools at his disposal. Fortunately, the computer tools are simple enough to permit the basic research without any previous historical training. Polish employees of the Archives are more competent and this is because polish institution lack of specialized tools like inventories and resources browsers in electronical version.

The fast and advanced process of digitalization of Archives is undoubtedly considered as one of the advantages of the institution. The new documents are digitalized in the National Archives and the database contain 1.9 mln of sources disponible on-line (the audiovisual and electronic archives). In any place or time, the sources could be consulted. The programs used for the digitalization are much better than the polish ones and in result the consultation of the electronical source is more comfortable. In Poland, the digitalized sources, mainly from the Central Archives of Historical Records in Warsaw (AGAD) or the Archive of New Acts, are disponible on the website www.szukajwarachiwach.pl., which shares the resources online. All those facilities influence the growing number of people consulting the archival materials. It is clearly confirmed in the statistics shown below (Table 1).

Table 1. Attendance of reading rooms, Internet portal and virtual inventory room, research and waivers in the National Archives of France in 2017

Period	Working sessions	Registered readers	Communications	Page views for the website	Unique visitors to the virtual inventories
2017	38,823	16,256	141,224	12,666,661	438,303
2016	39,517	13,321	142,409	1,158,867	508,971
2015	40,475	15,098	140,764	10,087523	352,274

Source: own study based on: *Key figures* (2018).

Using Conditions of the sources

The vast area of the Archives in Pierreffitte-sur-Seine is appropriate for scientific work to make the user spend all day there. He can keep his personal stuff and clothes in the special boxes locked with the user card or a single code chosen by the user. The reading rooms are very spacious. The tables are big and the chairs are comfortable (Figures 3, 5). The special trolleys for heavy document boxes are at disposal. The reading rooms can be accessed only with the user chip card.

In other part of the building, there are spaces for regeneration and meal, the bar, the machines with drinks and snacks and the terrace with stunning views and the sound of waterfall (Figure 4). Around the archives, there are swimming pools which give the impression of being on the island (Figure 2). It's the modern design solution of the building. There is also a special system of air conditioning which make the work agreeable even during hot days.



Figure 2. The view from inside of the The National Archives in Pierreffite-sur-Seine

Source: personal resource.



Figure 3. The reading room (the National Archives in Pierreffite-sur-Seine)

Source: personal resource.



Figure 4. The vie on the terrace (the National Archives in Pierreffite-sur-Seine)

Source: personal resource.



Figure 5. The reading room (the National Archives in Pierreffite-sur-Seine)

Source: personal resource.

Reprographics services

Another facility in the Archives is the possibility of making copies with the user's own digital camera without flesh. There are special tripods disponible for more professional photos. The consultation of certain private archival records requires permission of the reading room's manager. The more proficient document scans can be booked in the reprographics studio situated near the reading room. Xerocopies or scans in small quantity are made immediately

or the same day or during the next few days if there are a lot of demands. The reprographics are done with the very good quality equipment and with color xero machines. This service is done quickly by the qualified stuff. The prices of xerocopies and scans are competitive than in any copy shops offering even better quality services.[2]

Other services

Apart from sources sharing and reprographics, the Archives propose also other services. There is a shop selling books and archival souvenirs like pens, bags etc. Technical standards permit to organize in the Archives various expositions and conferences. The institution is part of the west European Archives politics which support and promote their own cultural, educational and popular activities. In XIX century, the pioneer pedagogical department was created in the National Archives and it was responsible for preserving the cultural patrimony (Kowalczyk, 2013, p. 107). The archives provide a large offer for pupils or students. The statistics say that 9,634 pupils visited the two sites of the Archives in 2017 (Paris et Pieriffitte-sur-Seine), 474 primary and secondary school teachers took part in basic or advanced training courses. 1,014 visitors participated in social outreach programs. After all, National Archives educational service proposes over 50 workshops and visits for schools and universities to make the young people discover the history by studying archival records. The offered activities are available on both sites and their subjects vary as per site: the activities at the Pierrefitte-sur-Seine site are related to public archives dating from 1790 and collections from private sources. The workshops at the Paris site concern the resources dating from the Ancient Régime time. All activities are organized with the same schema. The pupils or students visiting the National Archives in Paris or Pierrefitte-sur-Seine study first the documents that are part of the national heritage and then learn how to elaborate them (collecting, conserving, providing access to, and making optimal use of the documents). A workshop or exhibition is to transfer and revise the knowledge on a chosen subject. At the end of the workshop, a participant is asked to produce a work or give an oral summary of what he learned. During each workshop there is enough time for discovering original documents in the showcases or the temporary exhibition areas.

The National Archive prepared also a special offer for teachers – educational supports which help to work on core archival skills. It gives them a hand with teaching projects in various disciplines like history, literature, science, modern languages, and art. The activities are adapted to the level and progress of the school classes according to the national curriculum. Some of them are oriented for artistic and cultural education and practical interdisciplinary teaching. They are a way to include information and communication technologies in teaching activities. Participating in specific workshops constitute a major part in obtaining the IT and internet school certificate (brevet informatique et internet).

Summing up, the National Archives services take active part in knowledge, culture and education development in France.

Conclusions

The statistics present a considerable number of people attending the National Archives in Paris. It confirms the efficiency of the applied solutions in the process of democratization of archival services and development

[2] Color photocopie costs 30 euro for A4 page size (illegible source is scanned in first place and then printed for 0.30 euro; in case of the distance demands, there is an additional cost of 7 euro and the for the commands lower than 20 pages it's 60 euro for one A4 page size. www.archivesnationales.culture.gouv.fr/documents/10157/11409/d%C3%A9cision+tarifaire+tarif+reproduction-18juin-web.pdf/57e5b767-8f88-4272-8d45-8e89f2c9e987. For AGAD the printed copy costs 2 zl for A4 page size: *Regulamin*…, 2018.

of the informative society. The public access to the institution is facilitated by the IT system. The resources can be consulted and booked easily and quickly without limit where the assistance of the qualified employees with archival education is not needed. Those work directly on conservation and storing of the sources. The archival work is then highly advanced and simplified particularly for professional researchers. Apart from basic sharing sources service, the Archives give the possibility of quick and professional reprographics and assure the work comfort of the user to consult the records. In contrast to the Archives in Poland, the enormous funds have been transferred to build, equip and maintain National Archives in France. For polish ones like the Central Archives of Historical Records in Warsaw (AGAD), the governmental funds for maintenance, functioning and development are missing. The building of the Archives is situated in the center of Warsaw on the main tourist route. It is supposed to be an exemplary archival institution in Poland but it requires urgent repair and renovation of the façade.

To conclude, the National Archives in Paris becomes the exemplary institution proposing a wide range of services which puts one step ahead his modern user, preserving at the same time its traditional character.

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SMART LOGISTICS IN THE EVOLUTION OF THE LOGISTICS

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ABSTRACT The aim of the article is to try to define the scope of the meaning of the concept of smart logistics as well as to determine the place in the evolution of the logistics. The definitions available in the literature were analyzed and the author's definition was proposed. The attributes of the smart logistics concept are indicated. The stages of logistics concept evolution were tracked and shown how of smart logistics concept determines the contemporary management of supply chains. The Internet of Things was discussed as a determinant of the development of intelligent logistics.

Introduction

The development of digitization and the Internet creates new conditions for the economic and social spheres. For business, they are an inspiration to change and reconfigure business models. Modern IT technologies irreversibly transform traditional business, and the network is slowly becoming a common space for both stationary and typically virtual businesses.

Intelligent technical and technological solutions have become a great challenge for modern logistics. Creating a multitude of ideas for different areas of logistics, they contribute to greater efficiency and effectiveness of processes.

Cybersecurity is becoming a prerequisite for intelligent supply chains. It determines not only the effectiveness and efficiency of functioning, but also creates conditions for the implementation of logistics processes in cyberspace.

The aim of the study is to determine the scope of the meaning of the smart logistics concept and to show the place of this concept in the evolution of the logistics. The article is a conceptual and review nature.

SMART Logistics – definition and related concepts

The concept of "smart" appears more and more often in various areas of social and economic life. Most often it refers to things like a smartphone, smart car, smartwatch, smart house, or to business areas, such as smart specialization, smart logistics or socio-economic spaces, such as smart city. It is often used in different contexts, as it is vague in itself because it can have different meanings for different people.

The reference of the concept of smart to logistics requires a broader discussion, as there is still a lack of definition of the smart logistics concept in the literature on the subject, what is more – there is no broader discussion on this subject. When trying to determine the semantic field of the smart logistics concept, the understanding of the word "smart" should first be clarified. This is important, because the direct translation of the word from English is not applicable in this case. Colloquially, it is translated into Polish in the sense of "wise" or "clever". The term "smart", currently used in various areas of social and economic life, is interpreted in the sense of the word "intelligent" (Dembińska, Frankowska, Malinowska, Tundys, 2018, pp. 9–10). The premise of such a statement is often the use of these concepts interchangeably. Assuming this assumption, another semantic problem arises, that is, what interpretation to use for the word "intelligent". The Dictionary of the Polish Language (Słownik Języka Polskiego) requires that the word be used in the sense of a thoughtful, non-stupid, intelligent, wise, smart, knowledgeable, capable, and therefore quite similar to the word "smart". The analysis of literature gives the basis to claim that there is another understanding of the word "intelligent", which is based on intelligent computer technology (ICT). Interesting is the position regarding this issue by M. Weiser (1996). He notes that the term "intelligent" expresses current technological changes and thus shows its dependence on time. As he argues, the "smart home" of 1935 had electric light in every room, the "smart house" of 1955 had a TV set and a telephone in every room, and the "smart home" of 2005 had a computer in every room. With which you can agree that the word "intelligent" should be understood in this context in the context of implementing innovation and the availability of state-of-the-art technology, Sah believes that everything that limits human efforts and automates tasks should be described as "intelligent" (Sah, 2016, pp. 55–57).

It can be assumed that in this way the term "smart logistics" should be understood. It should be emphasized that the acceptance of such delimitation of the semantic field for this concept is an open matter, requiring further discussion.

The explanation of the concept of intelligent logistics can also be based on the meaning of the terms "smart products" or "smart services". Intelligent products and services are those that have taken over from people the part of their abilities, freeing them from doing work. Intelligent products and services evolve from the level of new technologies to the level of even newer technologies (Fleisch, Christ, Dierkes, 2005, pp. 3–37), which shows the dependence on the time mentioned by M. Weiser. Therefore, two conclusions can be drawn. First,

a technology-based approach to defining 'smart products' and 'smart services' is therefore used to define 'intelligent logistics'. Secondly, due to the fact that "intelligent logistics" changes depending on the current technology, it is characterized by time dependence and it is necessary to determine the current level of technology to interpret the concept of intelligent logistics (Uckelmann, 2008, pp. 273–284; Windt, Hülsmann, 2007, pp. 4–16). In other words, the temporal connotation of the concept of intelligent logistics affects its semantic field, determined by the level of technology at a given time.

As used herein, the term "Logistics 4.0" is also used. This concept is derived from the concept of "Industry 4.0" or "Industry 4.0". It is worth noting that the name "Industry 4.0" is used in Europe, in the United States and Anglo-Saxon countries the name "Internet Things" or "Internet Everythings" is used. The term "Industrie 4.0" appeared for the first time in the draft High Tech Strategy of the German government, promoting the computerization of manufacturing processes, and was for the first time officially used at the Hannover trade fair in 2011 (*Czym jest przemysł 4.0, część 2*, 2017). Industry 4.0 is a collective term meaning the integration of intelligent machines, systems and introducing changes in production processes, which aim to increase production efficiency and introduce the possibility of flexible product changes. Industry 4.0 applies not only to technology, but also to new ways of working and, therefore, also to the new role of people in the industry (*Czym jest przemysł 4.0, część 1*, 2017).

Industry 4.0 is the next, fourth stage in the evolution of the industry. As earlier stages, the following are listed:

1. Industry 1.0 – mechanization, which was characterized by the invention and implementation of a steam engine.
2. Industry 2.0 – electrification, which contributed to the displacement of steam engines and the development of production lines, adapted to production in large series.
3. Industry 3.0 – digitization, the domain of which were computers and data processing systems, enabling machine control via software.

The essence of industry 4.0 boils down to the ubiquitous combination of machines, products, systems and people, which will enable them to communicate, thanks to which they form a mutual management network (Wegener, 2015, 343-358). What differentiates phase 4.0 from phase 3.0 in the development of industry is the combination of mobile technologies with stationary automation (Paprocki, 2016, pp. 22–23).

The term e-logistics is also used among the concepts related to intelligent logistics (Dembińska-Cyran, 2005b, pp. 177–193). In contrast to the definitions of "smart logistics" or "intelligent logistics", many explanations for the term e-logistics can be found in the literature. According to the definition of W. Wieczerzycki (2012, p. 49), e-logistics is based on the use of the latest information technologies to support logistic management of the enterprise and to support the management of its business environment, especially supply chains. E-logistics uses the Internet and various types of IT systems in logistics processes and is part of the concept of electronic supply chain management (Palonka, 2008, pp. 325–336; Valkova, 2013, pp. 119–128). E-logistics does not involve the physical transport of raw materials and products, because it concerns the "virtual" supply chain planning and coordination of all logistic processes aimed at the maximum automation and streamlining of processes through the use of computer networks (Wieczerzycki, 2012, p. 49).

The next stage of the industry's evolution is mentioned – about "Industry 5.0", that is about industry 5.0. The term "Industry 5.0" was introduced in 2015 by Michael Rada as a response to the threat of limiting the role of man in Industry 4.0. Just as industry 4.0 is characterized by cyberphysical systems, the attribute of industry 5.0 is the interaction between man and machine/robot (Figure 1).

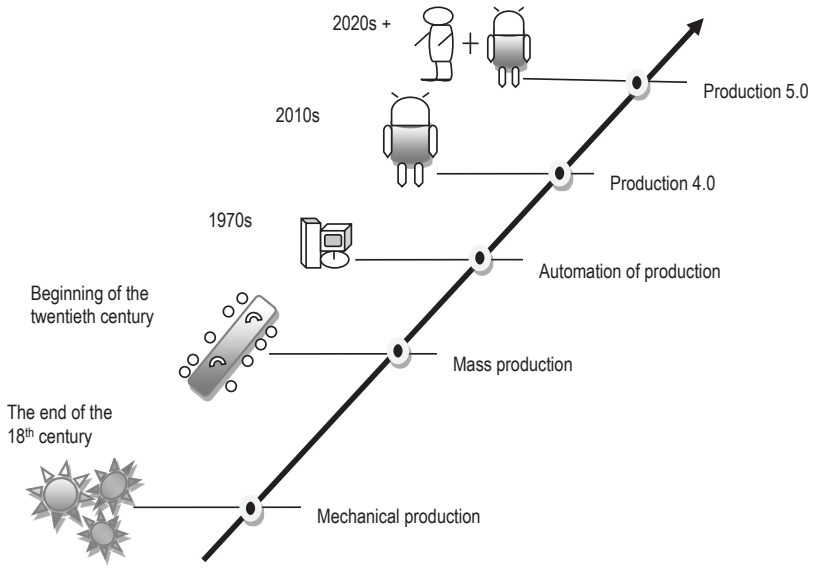


Figure 1. Stages of industry evolution

Source: own study.

In accordance with the Council's assumptions, in the concept of industry 5.0, man and machine are to form a functional whole. This particularly applies to robots that are to cooperate with people as devices cooperating in a direct and interactive way. In factories in robots and work zones, people are supposed to overlap and integrate, in contrast to current, separated work models (*Trendy…*, 2018).

S. Gotfredsen (2016) argues that Industry 5.0 reflects the growing need for individualisation of production, an implication of the increasingly individualized demand reported by customers. He believes that in the cooperation of man and machine, man introduces the element of creativity indispensable in the model of personified production. Therefore, it can be expected that in the near future a logistics model 5.0 will also be created.

The Internet of Things as a determinant of the development of intelligent Logistics

The Internet of Things is considered the next stage of the information revolution. It significantly affects the social and economic spheres by modifying business models. The concept of the Internet of Things was first used by the British entrepreneur and founder of Kevin Ashton's start-ups in 1999. This idea was formulated to describe a system in which the material world communicates with computers (exchanges data) using ubiquitous sensors. The essence of the Internet of Things does not lie in the devices themselves, but in the latent potential of data collected and sent by them.

There are many definitions of the term "Internet of Things". According to the Cisco Internet Business Solutions Group (Cisco IBSG), the internet of things can be said from the moment when the number of objects and objects connected to the Internet has exceeded the population. In 2000, there were 6 billion people in the world, and only 500 million devices were connected to the network. At the turn of 2008 and 2009. The number of devices connected to the Internet for the first time exceeded the number of inhabitants of the country. It can be said that it was at that

time that the Internet of Things was born. In 2010, a huge increase in the number of smartphones and tablets caused that the number of devices connected to the network amounted to 12.5 billion. On average, it was 1.84 of such a device per capita of the globe (population reached 6.8 billion). In 2011, the population reached 7 billion, while the number of devices connected to the network amounted to 13 billion (other sources provide 12.5 billion devices, including virtually every computer and significantly more than 1 billion smartphones) (Kwiatkowska, 2014, pp. 61–62). According to the "We Are Social" report (Digital in 2017, 2018) on the Internet, social media and the mobile industry, the number of Internet users in the world in January 2017 was 3.773 billion people (Table 1).

Table 1. Number and percentage of Internet users, social media and mobile devices in the world in January 2017

Total population	Internet users	Active social media users	Unique mobile users	Active mobile social users
7.476 bln	3.773 bln	2.789 bln	4.917 bln	2.549 bln
urbanization: 54%	penetration: 50%	penetration: 37%	penetration: 66%	penetration: 34%

Source: Digital in 2017 (2018).

It is estimated that by 2020, these devices will have over 50 billion, while the population is expected to increase to 7.6 billion. On average over six (exactly 6.58) devices connected to the network will fall on every inhabitant of the world. These estimates do not take into account the rapid progress of Internet technology and the devices that connect to it. What is more, this indicator would be much higher if only the participants of the digital society should be considered, and not the inhabitants of the whole globe, many of whom do not have access to the network (Kwiatkowska, 2014, pp. 61–62).

The Internet of the system of things consists not only of objects, but also processes, data, people, and even animals or atmospheric phenomena – everything that can be treated as a variable (Kolenda, 2018, p. 8).

- objects that can communicate, receive commands or transmit information,
- ICT network mediating in dialogue,
- IT systems and solutions for processing the collected data and transferring information to the devices (Kolenda, 2018, p. 4).

The consequences of the dissemination of the idea of the Internet of Things are not yet definitively determined, although one can be sure that the potential for dialogue between users and machines is enormous. The direction of development consists in increasing the interaction between a human being and an object. This in turn raises the need to analyze ever larger amounts of data, identify information contained in them, which is important for a given action and making optimal decisions about future behaviors. The source of this "intelligence" is analytics and the ability to use it even in the most complex decision environments. Direct business benefits, and thus financial benefits resulting from the wide application of the Internet of Things, can be found at the three levels of maturity proposed by Kirk Borne:

a) "Data to Discovery", where, based on new data and with the use of analytics, phenomena of which existence has not been known until now can be found and identified – for example, new disease patterns found thanks to detailed data from telemedicine devices;

b) "Data to Decisions", where the action can be taken on the basis of the acquired knowledge, often even autonomously – an example may be the sending of a welcome message and product recommendations to the returning customer, but also an emergency shutdown of the power turbine at the time of failure;
c) "Data to DollarsDividents", where the combination of two previous skills emerges real financial benefit for the organization or a new opportunity for business development (Kolenda, 2018, p. 4).

The Internet has radically changed our way of life. He transferred mutual relations between people to the virtual level in various areas, ranging from professional life to private life, especially socializing. The Internet of Things has the potential to add a new dimension to this process, enabling communication not only of people with smart objects, but also communication between such intelligent objects. This leads to ensuring communication always and everywhere, i.e. anywhere, using every medium of information and anything, that is everything, not just people, preferably using any network and all services. It is widely believed that the Internet of Things will lead to a much larger revolution than the Internet and mobile telephony put together. Currently, at least half of Internet connections, at least one of the parties is the thing (Kwiatkowska, 2014, p. 60).

The Internet of Things creates four types of offered functionalities:

– autonomy,
– optimization.
– control,
– monitoring.

The possibilities associated with these functionalities cause the emergence of new business models. Ten basic types can be identified (Wielki, 2016, pp. 211–212):

1. Business models based on the philosophy of "everything as a service".
2. Business models based on the use of new forms of outsourcing.
3. Business models based solely on data and their use.
4. Business models based on offering additional services to clients related to the physical product.
5. Business models based on the offering of intelligent products will be the source of additional benefits for the client.
6. Business models based on behavioral profiling.
7. Hybrid business models.
8. Business models based on offering IoT platforms.
9. Business models based on offering comprehensive IoT infrastructure solutions.
10. Business models based on offering enhanced services.

As for the first group, the most important "trend" within it is the product-as-a-service model. Its development is related to the more and more widely observed migration processes, from the scheme consisting in the purchase of a product by the customer in favor of one in which the producer retains ownership of it, while the customer uses it, paying for its real use. The development of functionalities related to intelligent, connected products offers great opportunities in this respect. The development of intelligent systems also allows the implementation of business models based on offering new forms of outsourcing. As for the third category, the development of intelligent connected devices enables the collection of huge amounts of various types of data that can be used to create business models based on their use. The development of the Internet of Things also gives the opportunity to implement business models based on offering customers additional services related to the physical product purchased and used by

them. Another group is business models based on offering intelligent products to customers, which are a source of additional benefits for them. Another group of business models are those based on the use of behavioral profiling. A certain compromise between the product-as-a-service category and the traditional acquisition of products by customers are hybrid business models. In this case, their sale may be combined, for example, with different types of service contracts based on remote monitoring of the device's functioning. Another group is business models based on offering IoT platforms to users. The next group of business models are those based on offering comprehensive IoT infrastructure solutions. The last group is business models based on offering extended services. This forward-looking category includes solutions based on the use of data and information collected by entities providing various IoT services and offering on their basis their own (Wielki, 2016, pp. 213–214).

A place of intelligent logistics in the evolution of logistics

In the literature on the subject you can find many shots showing the evolution of logistics (Bowersox, 1978; Gołembska, 1994; Skowronek, Sarjusz-Wolski, 1995; Blaik, 2002). The authors agree in principle that the development of logistics in the twentieth century was divided into the following stages (Kadłubek, 2010, p. 55):

- awakening stage of the logistics – mid-50s in the US,
- the stage of defining and conceptualizing the theory of logistics and its first applications in practice – the 1960s in the US and the early 1970s in Western Europe,
- the stage of creating dimensions of integrated logistics – the second half of the 70s and the mid-1980s,
- the stage of dynamic development of logistics as an integrated concept of business management – the second half of the 80s and the first half of the 90s,
- the stage of development of the supply chain concept – the second half of the 90s.

Entering the 21st century, the leading determinants shaping the functioning of logistics were, among others deepening specialization in the supply chain (Dembińska-Cyran, 1996; Dembińska-Cyran, 2004), sustainable development (Dembińska-Cyran, 2005a), customer relationship management (Dembińska-Cyran, Hołub-Iwan, Perenc, 2004). Scenarios or directions of logistics development in the 21st century have become the subject of many studies. Significant conclusions include the study "Global Logistics 2015+", made by DB Schenker and the Technical University of Berlin. Noteworthy is the report "2016 The Future Value Chain", prepared by Capgemini based on research conducted since 2005, supplemented with the report *Succeeding In a Volatile Market. 2018 The Future Value Chain* (Bujak, Gębczyńska, Miller, 2014, pp. 868–880). The above-mentioned studies show that key factors affecting future supply chains are changes in consumer purchasing behavior and greater use of modern technologies in information and physical flows. Particular attention is paid to three interrelated challenges:

1. The basic element is the development of new ways of cooperation, including sustainable changes in the field of culture, economic cooperation and planning of new activities, the use of economic effects.
2. By building an appropriate culture of cooperation between companies, creating the basis for easier and more effective exchange of information: the report emphasizes that "it is best to manage increasingly complex supply chains thanks to transparency".
3. Only an open collaborative environment can generate the right changes and flexibility of future value chains and effectively address the impact on physical flow of goods, energy price changes, changes in population density and other external forces (Bujak, Gębczyńska, Miller, 2014, pp. 868–880).

The main factors for the development of logistics in the 21st century are undoubtedly the dynamically developing information technologies and the spread of the Internet and the creation of new and broad possibilities. These determinants have created a wide field for the development of intelligent logistics, based on the use of advanced information and communication technologies in logistics, which gives the opportunity to define it as "intelligent".

In the DHL "Logistics Trend Radar" report for 2016, twenty-six key trends and challenges for modern logistics were selected. Most of them are associated with the development of artificial intelligence and personalization. It is planned to develop intelligent supply chains using systems of self-learning or self-learning using a computer, and to promote the Batch Size One and On-demand Delivery options. Created to exert a significant influence on logistics, the on-demand delivery option will enable consumers to deliver their purchases in the place and time chosen by them thanks to the use of flexible courier services. The Batch Size One option explores what could happen if consumer demand for highly personalized products has met mass production over the coming and rapidly changing supply chains that require logistics service providers to act quickly and to respond flexibly to changes in time and the place of manufacture (Logistics Trend Radar 2016).

Intelligent logistics creates many new solutions. At the same time, it creates opportunities for existing, well-known solutions to undergo development, becoming more perfect, more effective. Table 2 presents examples of solutions that implies the development of intelligent logistics.

Table 2. Selected solutions in the field of intelligent logistics

Dimension	Key solutions
Transport	Security systems, route planning systems, unmanned trucks, intelligent transport management systems, intelligent highway, navigation systems, augmented reality
Warehouse	RFID, intelligent warehouse, intelligent distribution center, intelligent forklift, intelligent racking, automation of picking, augmented reality
Production	Production control systems, quality control systems, intelligent assembly systems
Supply chain	e-supply chain, e-commerce, virtual supply network

Source: own study.

With regard to the term used in logistics 4.0, the development of logistics can be divided into the following stages (Figure 2):

- Logistics 1.0 – until the end of the 18th century,
- Logistics 2.0 – until the end of the 1960s,
- Logistics 3.0 – until the end of the 20th century,
- Logistics 4.0 from the beginning of the XXI century.

The logistics entry into the logistics phase 4.0 also triggered changes in the perception of the supply chain, which caused that the basic attributes of the supply chains are not only flexibility and agility, but also digitalization, which becomes their determinant (Figure 3). The emergence of a "digital client" ("connected customer") causes more pressure on suppliers, demanding a better adaptation of products to customers' demands and preferences, quick and trouble-free delivery. Digitization in the supply chain undoubtedly inspires, but also forces the creativity in the operational and tactical areas, making customer relations on the one hand more real, on the other hand more

effective. Therefore, it can be concluded that the creation of competitive advantage by intelligent supply chains takes place on three levels:

- data analysis supporting advanced decision making,
- interaction between people and machines increasing the functionality and efficiency of logistics processes,
- innovation.

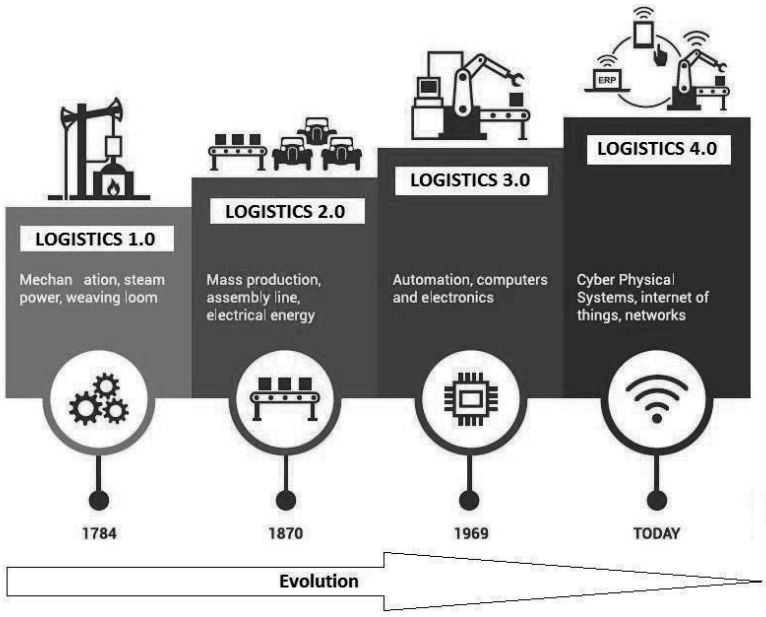


Figure 2. Stages of logistics evolution

Source: own study based on: *Industry 4.0*… (2017).

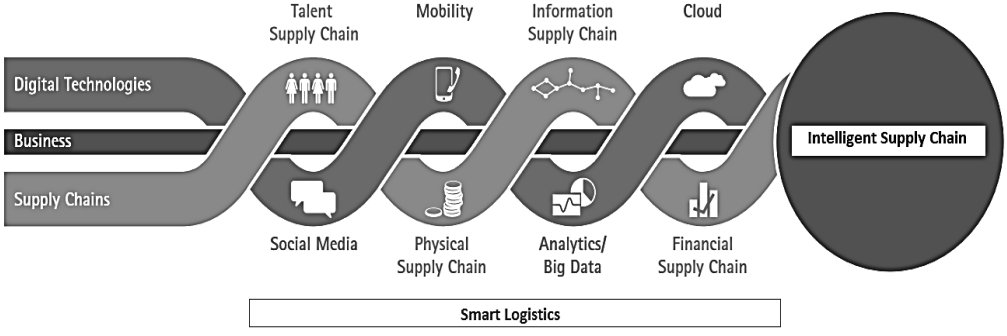


Figure 3. The concept of Intelligent Supply Chain

Source: own study based on: *Supply chain*... (2018).

It can be assumed that the supply chain is intelligent when it allows predicting customer demands, sensing changes in supply and demand and responds quickly to unplanned events. It uses information and quick decision-making methods in managing such a supply chain as a substitute for additional resources (*What is Intelligent Supply Chain*). However, it should be considered whether these are the only attributes of an intelligent supply chain. Do not look at the problem wider. Therefore, it can be assumed that the so-called "Supply chain intelligence" can be expected in many of its functional and organizational areas, such as transport, storage, supply, production, which has already been noticed before.

Conclusions

Analyzing the impact of intelligent technical and technological solutions on the logistics and supply chain, it is worth considering the effects of their application. In general, you can specify the following areas and effects:

- supply chain structure – one can expect a "slimming" of the supply chain, reconfiguration of cells,
- management of logistics processes – more efficiency and effectiveness can be expected,
- relations in the supply chain – you can expect a closer relationship, better conditions for cooperation in the operating and tactical field.

Of course, the basic condition for obtaining these effects is the ability to properly use intelligent solutions, and this in turn depends on the competence of the logistics staff. In other words, it should be expected that the competences of the logistics staff will be directed to intelligent solutions to serve the development of intelligent logistics and intelligent supply chains.

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THE UNIVERSITY AND THE EXTERNAL ENVIRONMENT – TOWARDS A COLLABORATIVE SYSTEM OF RESOURCES EXCHANGE

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ABSTRACT

Over the centuries, the role of universities and its impact on economic, social and cultural environment has changed. University relations with the main stakeholders: industry (business) and government have been changing from static and laissez faire to balanced configuration. The cooperation of these entities forms what we can call collaborative system of resources exchange. The main objective of collaboration with parties involved is to develop innovative solutions and to get the added value to each party. Value co-creation in a collaborative system depends on the ability to select and reconfigure individual elements in the way in which the emergence of new knowledge in a synergistic process takes place. University to meet the requirements of functioning in a collaborative system must adapt both its strategy (business model) and its internal processes. On the strategic level organizational culture based on dynamism of action, ability to take risks, willingness to change, ability to take advantage of opportunities, search for new ideas and innovation is of crucial importance. On operational level of crucial importance are relations between the process of knowledge production (research), the process of knowledge transfer (education), and the process of application of knowledge (innovation).

Introduction

Over the centuries, the role of universities and its impact on economic, social, cultural and even religious life has changed. In respective epochs, the university's relationship with the environment were determined by the concept of university functioning, its role in society, in particular in relations with the State and the Church. The university has always been associated with the external environment, carried out tasks for the environment

and met the needs of external stakeholders. In the history of higher education, we can recognize three types (generations) of universities: a medieval university, also known as scholastic, a Humboldt university and a third generation university (Leja, 2013, p. 29; Waltoś, Rozmus, 2012, p. 17).

Historically, the first and then the most important commitment of the university to the external environment is to provide personnel, in particular to the State. In the medieval Bologna model of the university, the emphasis was on legal sciences because educated counselors and scholars were required to hold numerous offices, including judges and positions in the church hierarchy.

The Humboldt University have been focused on research in which education was only a part of the university's model of functioning. Although, at the end of the nineteenth century, relationship between the world of science and industry became more important, especially for departments dealing with the research and new technologies development, there was still a definite distinction between universities and industry.

Cooperation between the university and the external environment has become an important element of the concept of the university's functioning in modern times. In addition to two traditional areas of activity, i.e. education and scientific and research activities, one more area was noted, namely building relationships with the external environment.

Models of relations between the university and the external environment

External relations between universities are determined by two main stakeholders, namely the State and enterprises (industry, business). Three models of mutual relations between these stakeholders are presented by Etzkowitz and Leydesdorff (2000, p. 111). Model proposed by authors presents three perspectives illustrating the mutual relations between these three entities, taking into account the leading role of the university, i.e.:

- static configuration,
- laissez faire configuration, and
- balanced configuration.

Static configuration (also referred as the TripleHelix I) assumes that the State plays the leading role by stimulating the activities of the university and industry. At the same time, the State is the initiator and administrator of resources necessary to carry out innovative undertakings. The second perspective is based on different premises, which assumes a limited role of the State, and the driving force are enterprises whose development stimulates activities undertaken by universities and the State. These two entities in the laissez-faire model only fulfil auxiliary functions to the industry (TripleHelix II) (see Figure 1).

The evolution of the university's relationship with the external environment took place not only in the aspect of who is a partner in cooperation, but also in the sense of tasks carried out for the external environment. In this respect, evolution takes place from internally oriented tasks to the use of research and education process for the needs of external stakeholders. As it is often noted, evolution comes from ivory tower (as a metaphor of internally focused university) toward university delivering market-oriented knowledge services.

It is worth emphasizing that university as a science-based company can no longer be an Island unto itself. In a highly competitive global environment, it is necessary to use outside sources of knowledge and technology. Companies increasingly look to universities, as well as to other firms and government laboratories. Cooperative initiatives are emanating from both the academic and industrial spheres, often encouraged by government – at both regional and national levels – and by multinational organisations (Etzkowitz, Leydesdorff, 1998, p. 203).

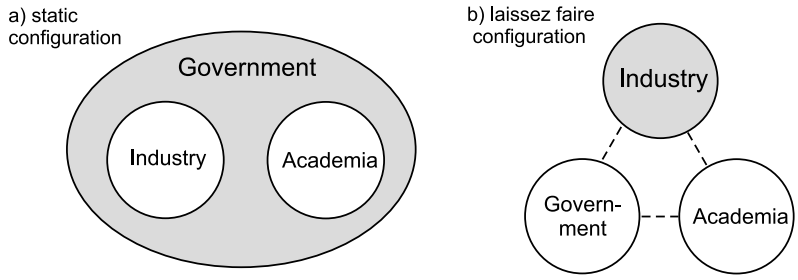


Figure 1. Static and laissez faire configurations between Academia, Industry and Government

Source: based on Etzkowitz, Leydesdorff (2000), p. 111.

The appearance of the third mission of higher education institutions was a natural consequence of social and economic development, increasing global competition and seeking new sources of competitive advantage, which were more and more often perceived in acquiring and using information and knowledge that universities had at their disposal.

Building relations between the university and the external environment related firstly to cooperation with enterprises (industry), later expanding to other areas of socio-economic activity. In particular, together with the development of cooperation with the external environment, joint initiatives of the university and industry were also involved in the state and local government institutions.

It can therefore be concluded that the era of cooperation between universities and the external environment has come. One of the main reason encouraging cooperation is that each partner is looking for resources vital for further development. It can also be stated that the necessity of cooperation results from the fact that in the contemporary, complex economic and social world, no one has full control over resources, including knowledge resources that are necessary, in particular for the implementation of research and development projects.

It is therefore essential to search for opportunities and access to resources available to others building an interdependent network of relations. Currently, the information where resources are available and how to reach them is equally important (and maybe more valuable) than being a resource owner. The reason for the high complexity of the functioning of higher education institutions is also the high degree of interdependence between entities. The cooperation of these entities forms what we can call the collaborative system of resources exchange. The main objective of collaboration with parties involved is to develop innovative solutions and to get the added value to each party as a result.

Triple Helix III as the collaborative system of resources exchange

The collaborative system of resources exchange can be considered from the point of view of value co-creation. Broadly speaking, co-creation refers to the processes by which two or more parties collaborate, or participate, in creating value for themselves or others. The assumption behind co-creation is that there will be a benefit through the involvement of the relevant parties in developing a product/service/initiative (Hughes, 2014, p. 338). Referring to marketing concepts it can be concluded that firms are working closely with customers and suppliers and are obtaining new insights and knowledge from these sources. If we assume that individual entity

forming the collaborative system are internal customers to each other, the term collaborative innovation is relevant (Geer, Lei, 2012, p. 65). Moreover subject of exchange in such system are to a greater extent not tangible but intangible assets (knowledge, ideas, relations, methods). The theoretical understanding of value co-creation has been enhanced by the concept of Service Dominant Logic (SDL). SDL argue that increasingly markets have shifted away from the exchange of tangible goods towards the exchange of intangibles, specialized skills and knowledge and processes (Vargo, Lusch, 2008, p. 5). The SDL concept emphasizes the importance of the university in the collaborative system because it assumes that fundamental unit of exchange and the source of economic growth is the application of specialized skills and knowledge (Vargo, Lusch, 2004, p. 5), assets that are at the university's disposal.

Value co-creation in the collaborative systems depends on the ability to select and reconfigure individual elements in the most efficient way. Etzkowitz (2008, p. 76) believes that the configuration of resources determines innovation and thus innovation is defined as the reconfiguration of elements into a more productive combination. Therefore, new knowledge can be created between participants of strategic configurations as a synergy of competences brought in by each party. Such synergistic knowledge is difficult to define because it reflects a complex, dynamic process of exchanging explicit and implicit knowledge, both formal and informal, between organisations participating in the network. The cooperation of these entities implies the existence of an interaction process in which all participants use their resources and competences mutually: the effect of this is the emergence of new knowledge in a synergistic process. Nielsen (2000, p. 7) distinguished complementary and synergistic network of knowledge. Traditional approach assumes knowledge compatibility and complementarity. The focus tends to be on transfer of existing, explicit knowledge rather than creation of new one. Hence, shifting the focus from inter-organisational transfer of complementary knowledge to development and distribution of synergies of knowledge within collaborative system within which new knowledge can be created among the participants in a strategic aggregate arrangement as a synergy.

The third model of mutual relations between enterprises (industry, business), government and academia Etzkowitz, Leydesdorff (2000, p. 112) assumes a balanced configuration, however, due to the fact that universities have the most important resource - knowledge, their role in this configuration is leading (TripleHelix III model).

The objective of this configuration is to create a favourable environment for innovation, to cumulate the development of innovation and to take advantage of the synergy effect possible to achieve as part of joint initiatives of these three entities (see Figure 2). On the one hand, the university provides knowledge, on the other it benefits from the opportunities created by the government (local and regional as well), and other institutions with research needs (joint research projects). The demand for educated employees, as well as regulations that are set by the government (legal, organizational and financial) are also part of resources exchange. Benefits resulting from cooperation with business are manifested both in the area of research projects (demand for research) and projects of an educational nature. An unquestionable advantage for the university that emerges from cooperation with business is the access to new practical solutions that are invaluable help in the modern educational process.

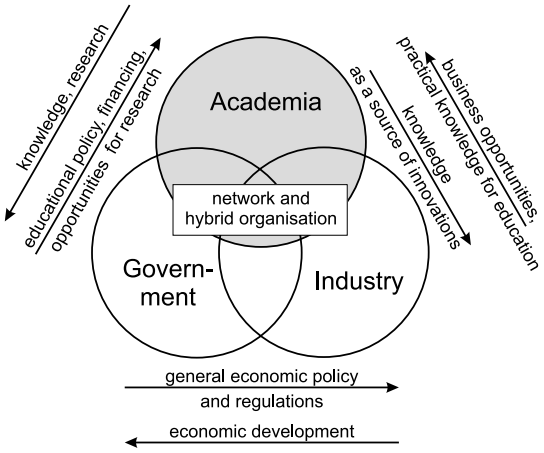


Figure 2. Collaborative system of resources exchange in Triple Helix III model

Source: own elaboration, based on Etzkowitz, Leydesdorff (2000), p. 112.

The Triple Helix III model, in which individual entities strive to create an innovative environment for the creation of spin-off companies, as well as any joint initiatives that take on various forms of network structures, including clusters or hybrid organisations.

The university to meet the requirements of functioning in the collaborative system must adapt both its strategy (business model) and its internal processes. On the strategic level the third generation university must be closely associated with enterprises and entrepreneurs and local authorities, being an integral part of social and economic life. Another name for the university of the third mission or a third generation is the entrepreneurial university. The use of an adjective "entrepreneurial" means that it is characterized by such features as: dynamism of action, focus on market needs, the ability to take risks, the ability to take advantage of opportunities, search for new ideas and innovation. The entrepreneurial university itself tries to act in an innovative way, but also contributes to the innovative application of knowledge and research that it produces. A modern university has to compete for the best lecturers, students as well as contracts and research projects. Such high competitiveness forces the activity of the employees themselves and the people managing the university. It also requires to develop an organizational culture based on entrepreneurship, willingness to change and take risks. As noted by Clark (1998, p. 128), who is considered the creator of the concept, the entrepreneurial university is taking risks when initiating new practices whose outcome is in doubt, actively seeks to innovate, develops a work culture that embraces change. The ability to search for partners, create synergic coalitions, and finally the ability to act in an international environment are also crucial.

On the operational level, the triangle of knowledge can determine the main processes necessary to implement the strategic assumptions of the third mission university. The knowledge triangle shows the relationship between research (the process of knowledge production), education (the process of knowledge transfer) and innovation (the process of application of knowledge) (see Figure 3).

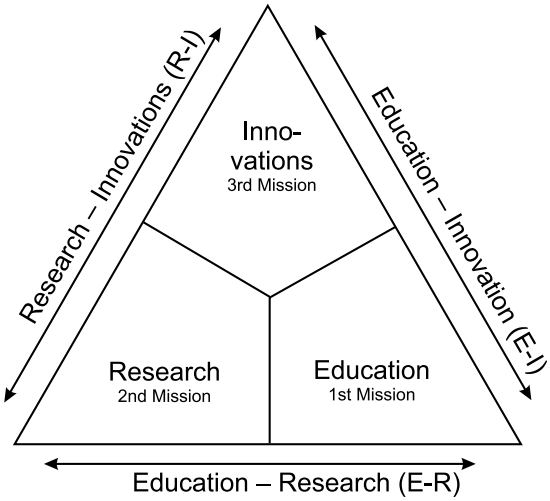


Figure 3. The Knowledge Triangle

Source: own elaboration based on: Grichting (1995), p. 66; Lassnigg, Hartl, Unger, Schwarzenbacher (2017), p. 7.

The implementation of these main processes relies on balancing three areas of the university activity, considering the area of application as the most important. The balancing of these areas can only take place when the mutual relations between them (E-R, E-I and R-I) take the form of synergic cooperation based on the benefits for all participants.

Conclusions

The relationship between the university and the external environment has undergone a significant evolution over the years. In the system of three partners (university, government, business), the university has a leading role, because it has a wealth of knowledge, which is a huge opportunity, taking into account that initiatives are emanating not only from academic but also industrial spheres, often encouraged by government. Mutual relations between these entities may take different forms, but the target model is the collaborative system of resources exchange in which the subject of the exchange are mainly intangible resources, primarily knowledge and specialized skills. The concept of value co-creation (value emerges in the process of cooperation with partners) in the Triple Helix III model rather than value creation (transfer between partners) is the assumption of the functioning of the cooperation network. The university itself, in order to take advantage of the opportunity that stands before it, should build a balanced system of internal processes implementation (conducting research and educational process), which in turn will form the third process of their application into collaborative innovation.

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PASSENGER TRANSPORT AS A PART OF THE SZCZECIN METROPOLITAN RAILWAY PROJECT – PROBLEMS WITH REACTIVATION THE CONNECTION SZCZECIN–POLICE

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Abstract The aim of the article is to analyze the possibilities of effective implementation of the Szczecin Metropolitan Railways (SKM) concept, especially in relation to the reactivation of the Szczecin–Police railway connection. This is the only one that is currently not carried out. The given article presents the main conditions to be met in order to make this connection efficient and bring the desired effects which means that passengers will be entirely taken over by the rail transport.

Introduction

The spatial expansion of the metropolis that has been occurring for many years and resulting and the separation of places of residence, work and services causes more and more mobility of residents. This requires the local authorities to organize a better and more efficient transport system, both on an individual and collective basis. Mobility of agglomeration residents must be ensured at such a level as to ensure a good standard of living for the

residents, enable economic development of the entire metropolitan area, while minimizing the negative impact on the natural environment (Koźlak, 2013, p.173).

The importance of the rail transport for city and agglomeration transport services in the 21st century has markedly increased. After the period of regression and limitation of the rail transport improvement, a renaissance and further progression took place in the 90s. This concerns the major urban transport means, such as tram or metro, and also the railways, which are increasingly used for suburban and typical urban connections. This is largely visible in big agglomerations (eg. Berlin, Paris, London, etc.). Rail transport is mainly adopted there to link the city center with peripherical areas.

The rail transport in big cities and agglomerations has been gathering importance also in Poland, particularly after joining the European Union. However, the differences with Western European countries are still noticeable. Efforts are being made to incorporate the rail transport into the metropolitan or agglomeration transport services as it has already been existing in polish cities as Warsaw, Tri-city, Upper Silesia and Łódź.

The idea of creating the Szczecin Metropolitan Railway (SKM) for Szczecin agglomeration also emerged. Due to the studies on further boost of Szczecin, it is expected to spread in four directions: north (left bank of the Oder – towards Police, right bank of the Oder – towards Goleniów), west (towards the German border), east (towards Stargard) and the south (towards Gryfino). Therefore, it is indispensable to name a responsible entity which would make rail transport operate for the connections linking the above towns (Strategia, 2016, p. 69).

The article sketches the SKM concept and it focuses mainly on the reactivation and expansion of the Szczecin–Police connection where rail passenger transport has been suspended. Presently, it is served by public transport or wheeled passenger vehicles.

SKM concept

The concept of the Szczecin Metropolitan Railway (SKM) is concentrated on the creation of a transport services network including the rail transport in the metropolitan area of Szczecin. The network will englobe lines already served in passenger transport as well as those where the transport was suspended in the past (Studium, 2014, p. 9).

The line segments used at present in passenger transport are:

- line no. 351 (Poznań Gł.–Szczecin Gł.) on the section Stargard–Szczecin Gł.,
- line no. 273 (Wrocław Gł.–Szczecin Gł.) on the section Dolna Odra–Gryfino–Szczecin Gł.,
- line no. 401 (Szczecin Dąbie–Świnoujście) on the section Szczecin Dąbie–Goleniów.

In addition, the passenger transport on the line no. 406 (Szczecin Gł.–Trzebież Szczeciński) served on the section Szczecin Gł.–Police will be reactivated. The SKM network design is outlined on Figure 1.

The implementation of SKM includes the modernization of stops and stations, together with the infrastructure of platforms and the construction of parking lots (Park & Ride). In case of existing served connection, the total cost of infrastructure modernization is up to 135 million PLN (Kraśnicki, 2018). The modernization of linear infrastructure will also be held on sections (Koncepcja, 2011, p. 171):

- Szczecin–Stargard – modernization as part of the basic National Railway project; the maximum speed limit for passenger connections will increase from 120 to 160 km/h,
- Szczecin–Goleniów – modernization as part of the basic National Railway project; the maximum speed limit for passenger connections will increase from 120 to 160 km/h,

– Szczecin–Gryfino – modernization as part of the funds of infrastructure managers (PKP PLK SA); adjustment of speed limit up to 120 km/h.

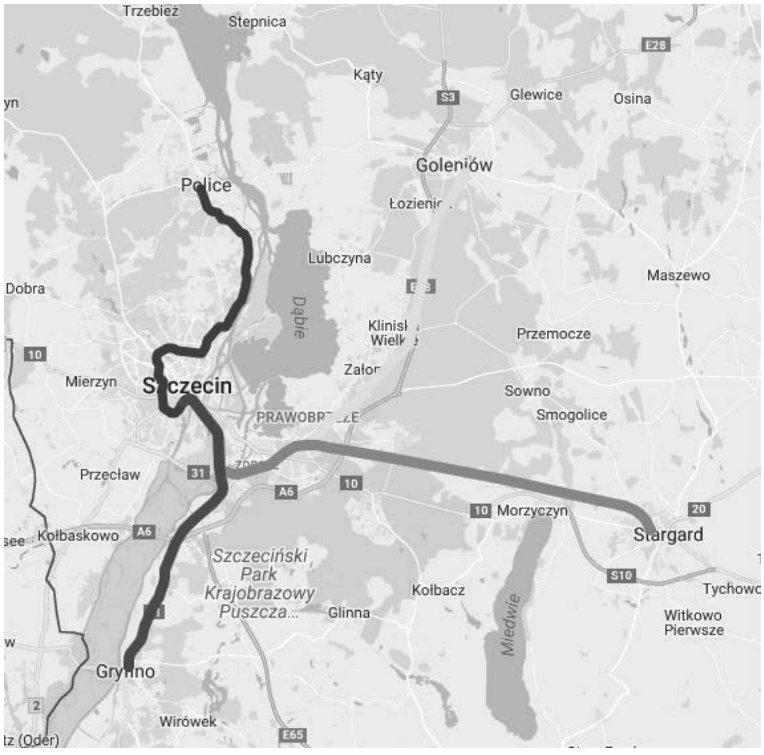


Figure 1. The Szczecin Metropolitan Railway network design

Source: own study based on http://skm.szczecin.pl/index.php/mapa.

As part of the SKM project, the Marshall Office plans also the purchase of rolling stock adapted to agglomeration transport services.

Thanks to the implementation of the SKM concept on active sections of the line, the rail transport will become efficient and competitive in the area of :

– the frequency of connections from Stargard, Goleniów and Gryfino to Szczecin,
– the reduction of the journey time,
– the new tariff rates (creating an integrated metropolitan fare and ticketing system).

Reactivation of the Szczecin–Police connection

The reactivation of passenger transport for the connection Szczecin–Police encounter big doubts regarding its efficiency. In this case, it is necessary to meet certain conditions in order to achieve the goal of attracting the passengers to use the rail transport instead of public transport (buses and wheeled passenger vehicles).

As part of the SKM project, the revitalization of the 406 line will have the biggest contribution from the SKM budget. The indispensable actions must be taken to fulfill the desired goal. Three of them could be enumerated:

- time and journey fare,
- frequency of connections,
- good access to the train station in Police

Time and journey fare

The shortest connection between Police and Szczecin is served by public transport – buses no. 101 (it takes 36 minutes) and 107 (it takes 37 minutes). The bus stops for those lines are located on Rodła Square in the center of Szczecin.

Journey fare from Szczecin to Police is included in the urban ticketing system, which is based on the time fare. The price of a single ticket depends on the journey time once the ticket is obliterated. For the connection in question, the price of a single ticket is 4.00 PLN (approximative journey time up to 60 minutes).

Simulation of a journey from Police to the center of Szczecin by SKM:

- journey time by tram from the Szczecin Niebuszewo interchange junction to the Rodła Square stop (the terminus of buses no. 101 and 107) – 9 min,
- transfer time from a train to a tram at the Szczecin Niebuszewo interchange junction – approx. 10 min.

Taking into consideration that the journey time by train and tram should be comparable to the time by bus (36–37 min.), we get the result that journey time by train doesn't exceed 18 min. For the data where there are 8 stops on the Police–Szczecin Niebuszewo section and the stop time at one of the stops is up to 1 min. we get respectively the calculation:

- commercial speed (including stopovers at stops) Vh = 46.7 km/h,
- technical speed (without stopovers at stops) Vt = 84.0 km/h.

The above calculations (simulation) show that it is possible to achieve the desired speed, in other words the comparable journey times for the discussed connection.

Frequency of connections

The number of journeys for buses no.101 and 107 departing from Police to Szczecin during given hours is shown in Table 1.

Table 1. Number of journeys for buses no. 107 and 101 during given hours on weekdays from Police to Szczecin

In hours	Number of journeys	
	line 107	line 101
1	2	3
4–5	2	1
5–6	6	2
6–7	10	3
7–8	10	1
8–9	7	2
9–10	6	1
10–11	6	1

1	2	3
11–12	6	2
12–13	6	1
13–14	7	2
14–15	9	2
15–16	10	2
16–17	8	2
17–18	7	1
18–19	6	2
19–20	5	1
20–21	4	2
21–22	3	1
22–23	3	1

Source: Timetable taken from the Municipal Transport and Roads Management in Szczecin (http://www.zditm.szczecin.pl).

As it results from the Table 1, there is a significant difference in frequency of buses no. 101 and no. 107. This is due to the fact that line 101 departs from another part of the city of Police (old city). The departure of bus no. 107 is in the housing estates (new city). At present, over 80% of inhabitants live in new town in Police. That's why there is a difference in frequency of both buses.

SKM trains must keep the frequency of the bus no. 107 for the comfort of the passengers benefiting from the offer of the public transport.

Good access to the train station in Police

One of the most serious challenges related to the reactivation of passenger rail connection between Police and Szczecin is to ensure attractive access to the railway station in Police. The existing railway station in Police is located in the old city, far away from the new housing estates. As part of the discussed project, the construction of a new railway station in Police located in close proximity to the new housing estates is desirable. Two variants of the location of this station were proposed.

In the first option, there was a plan to create a branch line 406 with three stops in direction of new Police in northern part. In the second option, the branch line going through the southern part and ending up with a stop located in the central part of the new city was planned. The decision has already been made that only the "Police Piłsudskiego" stop will be built in the future. However, this resolution could constitute a major obstacle because the distance between the planned stop and new housing estates is still considerable. This location may not attract the inhabitants of the new housing estates to benefit from the mentioned railway connection.

Conclusions

The considerations presented in the article could lead us to the conclusions listed below :

a) the creation of the Szczecin Metropolitan Railway is to be considered as a very good idea that realizes the premises of Polish and the European Union transport policy including the promotion of rail transport as part of public transport services;
b) Incorporation of the active connections (Szczecin–Stargard, Szczecin–Goleniów and Szczecin–Gryfino) in SKM project would certainly assure the increase of the passenger transport;

c) reactivation of the connection between Szczecin and Police is characterized as a challenge because the takeoverof the passengers requires actions that would ensure precise journey time, integration with the public transport system of Szczecin, competitive ticket prices and frequency of connections;
d) a serious drawback for reactivation of the connection linking Police with Szczecin constitute the second location variant with construction of a new railway stop in Police; it would discourage passengers from using the railway transport to travel to Szczecin.

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MARKETING LOGISTICS MANAGEMENT IN E-RETAIL – THE ESSENCE AND SELECTED PRACTICAL ASPECTS

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ABSTRACT

The growing demands of consumers evoke the need for enterprises to undertake many innovative activities aimed at the greatest possible satisfaction of the client with the assumption of optimizing the costs of these activities. One of the modern methods of managing both the enterprise itself and the entire supply chain is the marketing logistics management concept. Marketing logistics management is a kind of expression of the coupling and integration of two concepts: logistics as a concept of flow-oriented management and marketing as a market-oriented concept of business management. The objective of the article is to present the concept of marketing logistics management and to point out its selected practical aspects in the area of e-retail. At the beginning of the article the concept of marketing logistics management was clarified and then its e-retail characteristics were described. In this part reference is made to the 4C concept in relation to marketing activities and the impact of this concept on the area of logistics activities was pointed out. The next part of the article describes a practical example of implementing activities, which integrate the area of marketing and logistics in a trading company. The conclusions were formulated at the final part of the article. The paper uses the methods of literature review, case study analysis and synthesis.

Introduction

Initially, marketing and logistics were treated in enterprises as separate areas. The reasons for this approach were the perception of the role of logistics only in the aspect of transport and storage processes. The narrow field of view also applied to marketing management, which focused only on the areas of product strategy, promotion and price. Conscious distribution management, also including logistics, has been a rarity.

The-evolution of both concepts allowed us to see that effective logistics is a key part of the marketing strategy that enables us to achieve a competitive advantage. Both marketing and logistics adjust processes to the needs and expectations of customers. They complement each other, because marketing stimulates demand for products or services and logistic activities allow for their proper distribution (Blaik, 2010, p. 300).

Concept of marketing logistics management – literature overview

Literature describes various definitions and relations between marketing and logistic. Sometimes marketing and logistics are treated as separate spheres, sometimes one of them is superior to the other, they are also described as equivalent concepts or as systemically integrated areas (Pokusa, 2007, pp. 41–59; Worobjow, 2010, pp. 243–252). The following megatrends can be observed in the environment, which have a significant impact on both marketing and logistics (Bujak, 2014, pp.133–151; Kaźmierczak, 2016, pp. 95–108):

- in-crease in customer requirements,
- growing competition, changes in the information technologies and telecommunications,
- shorter life cycles of products,
- development of modern distribution channels for goods,
- corporate social responsibility – CSR,
- efficiency and flexibility of the company.

Recognizing these changes in the environment, it seems reasonable to look at the concept of logistics and marketing as elements that together participate in creating a value chain for the customer.

In accordance with the concept of value chain management, enterprises should focus on providing the client with appropriate, maximum in given organizational conditions, values in a given area and constantly improve it, while maintaining the right level in other areas. This guarantees achieving a steady increase in customer satisfaction, and thus a long-term competitive advantage. The marketing and logistic processes have a significant contribution to the creation of the expected value by the customer. Marketing processes such as developing the product idea or building long-term relationships and communication with the client are of particular importance. On the other hand, the most important logistics processes are flow coordination processes, ensuring timeliness and convenience of deliveries, optimizing stock levels, organizing transport and ensuring a high level customer service (Pokusa, 2006, pp. 51–62).

Logistics value chain is one part of the enterprise's value chain, which includes such external logistics activities as delivery of raw materials and finished goods, and also involves such internal logistics activities as production and selling. In the traditional structure of value chain, the "logistics" activities were shown in internal logistics and external logistics, but all of them are parts of logistics value chain (Zhou, Zhang, 2010, pp. 26–29).

A prerequisite for the implementation of all dimensions of values for the client is to develop an appropriate concept and principles for shaping the logistics and marketing chain of creating and delivering value (Pokusa, 2006, pp. 51–62).

The integration of logistics and marketing functions is a process of interaction and cooperation, the aim of which is to obtain mutually acceptable results for the company (Topolsek, Borut, Cvahte, 2016, pp. 29–32).

The basic features of logistic and marketing management are presented in Table 1.

Table 1. Characteristics of of marketing logistics management

Basic reference areas	Properties and dimensions of marketing logistics management
Integration	Integration of logistic and marketing in the scale of enterprise and market management
System	Logistic and marketing management functions as a business management subsystem
Management concept	The flow and market oriented concept of integrated enterprise management
Processes	logistic and marketing management as a chain of key management and transformation processes in the enterprise
Management instruments	Logistics management as a subsystem of management tools (strategic and operational aspects of logistics – mix and marketing mix)
Efficiency	Logistics and marketing management as a system orientation and determinant of effectiveness (gaining an advantage in terms of efficiency in business management and on the market)

Source: own elaboration based on Blaik (2007), p. 46.

The marketing and logistic activities implemented create a coherent system allowing to achieve optimization in the areas of: customer service, transport, inventory control, storage, location of production plants and warehouses, order fulfillment, material supply, demand forecasting, information management, material flows, service after-sales service and handling returns and complaints.

Competing for a buyer only by offering the right product quality is no longer enough, because logistic service plays an extremely important role.

Harrison and Hoek point out four basic determinants of customer orientation in Logistics (Harrison, Hoek, 2010, pp. 67–96):

- marketing perspective,
- market segmentation,
- service quality,
- logistic strategies subordinated to the interests of clients.

The concept of logistic and marketing management uses marketing mix and logistics-mix instruments (Blaik, 2010, pp. 302–304). Today, in relation to marketing, the formula 4C is used, which includes (Wang, Wang, Yao, 2005, pp. 660–669):

- customer need and wants,
- cost to the customer,
- communication,
- convenience.

In terms of logistics, we can identify the following components (Fernie, Sparks, 2004, pp. 1–25; Blaik, 2010, pp. 302–304; Llamazares, 2015, p. 186):

a) storage facilities (What types and how many warehouses should be provided and where they should be located?);
b) inventory (How many stocks should you keep in your country or region? Where exactly are they to be stored? What technology should be used in the storage and picking processes?);
c) transportation (Own transport or outsourcing services? How often should you provide? What should the delivery schedule be?);
d) unitization and packaging (The consolidation of a quantity of cargo into one large shipping unit for easier handling, as in palletizing or containerization;

e) communications (flow of information – for example: invoicing, demand forecasting, sales reporting issues);
f) order fulfillment and service process (receiving and handling orders, after sales service).

Adaptation of marketing logistics management concept for e-retail needs

Online market creates enormous opportunities for business development in the future. Using the Internet as an additional sales channel is now becoming a necessary condition for the company's competitiveness. In addition, due to the increasing cost pressure, special attention should be paid to process optimization. A special process is the handling of orders, which perceived as an added value to a basic product may be a determining factor in the selection of a supplier. To ensure the optimization of e-retail processes, a concept integrating marketing and logistics activities is introduced. Table 2 presents the characteristics of the 4C concept for e-retail's needs.

Table 2. 4C concept for e-retail

	4C components
Customer need and wants	Both retailers and e-retailers should offer products and appropriate customer service that will satisfy customers' expectations to the maximum extent. The basic task of retail and e-commerce is to choose a range of products offered for sale and coming from various sources. A wide and deep assortment that You can offer is a characteristic feature of e-retail. The possibility of individualizing the product. Buyers of products online have less opportunities to get advice on the choice of the purchased product, in case of indecision choose other purchase channels. In order to convince the customer to make a proper purchase, e-retailers should accurately describe the products sold in order to clearly present value and benefits terms
Cost to the customer	It should be noted that the costs of purchasing goods online also include transport costs and Internet access costs. When the transport costs are too high, the customer will resign from the purchase. E-retailers to encourage buyers to buy can lower the price of products only in the online channel or offer products that are not available through other channels. Supplier and price comparisons can be done easily and quickly, which can also increase the cost savings as well. The possibility of individualizing the prices
Communication	Communication is a two-way process also involving feedback from customers to suppliers. Communication is not just advertising but all the ways in which retailers communicate with their customers, including, for example, marketing research public relations (PR), social media, direct mail, e-mail and loyalty programs. The task of e-retailers is to provide the possible exact characteristics of the product (s) being sold, which in the case of sales in the traditional store is easier, because you can see the product live, touch it and see how it works
Convenience	Many customers prefer a multi-channel approach: browse on the web, buy instore or vice versa – or buy on the web, return to the physical store for a refund. Physical store can also be important for the e-retailer becouse many customers prefer to buy from your own country due to more more confidence in in the seller and lower transport costs. Virtual location and the ease of finding the website. Website design such as navigation, layout and ease of purchase. The customer spends less time to buy the product. The opportunity to purchase a product or service in electronic form. The need to ensure security on the Web

Source: own elaboration based on Dennis, Merrilees, Fenech (2005), pp. 179–193; Wang, Wang, Yao (2005), pp. 660–669.

The introduction of the 4C concept in B2C e-commerce has a significant impact on the shaping of logistics processes, whose main task is to ensure coordination of activities and optimization of goods and information flows.

The logistical consequences of the 4C concept in e-retail are as follows (Lasgaa, 2010, pp. 1–18; Dennis, Merrilees, Fenech, 2005, pp. 179–193):

- the possibility for e-shopping is becoming available for more customers from different places in the country and from abroad increases the logistics service area,
- making purchases via the internet causes that the intermediary, especially wholesalers, in the supply chain can be deleted which make the product cheaper than buying it in a traditional store,
- supplying the products that customers want, in the right sizes and quantities, at the right time and in the right place; convenience for the consumer means the possibility of choosing a place of delivery such as a stationary store, kiosk, fuel station, etc.,
- thanks to the use of modern IT systems the supplier can react immediately on potential needs of the customer,
- smaller order sizes but larger number of buyers,
- customers orders are much more unpredictable and unstable,
- management of a larger product assortment than in traditional off-line stores,
- inventory management and shipment is based on supply chain connectivity and visibility,
- combining of fresh products with and non-food products in one electronic order asks mostly additional activities like consolidation, co-packing and cross docking,
- larger returns-flows to the supplier than in traditional trade,
- demand for on-line shipment tracking information,
- bigger focus on personalized marketing, which creates demand for customized delivery and after-sales customer services,
- need for introduction efficient supply chains with computer network links between suppliers and retailers,
- co-operation between suppliers and retailers has been key to improving the efficiency of satisfying customers whilst minimising stocks and costs. Stock levels have been reduced using techniques such as Electronic Point-of-Sale, Quick Response and Efficient Customer Response.

Integration of logistics and marketing activities – case study

"Smyk" is an international chain of specialist stores with articles for children. The company's mission is to offer everything that children need and dream about. The philosophy of "Smyk" chain stores is (Smyk, 2018):

- the widest selection of products for children from the moment of birth to the age of 14,
- the highest quality of products,
- attractive prices,
- professional service and specialist consulting,
- a number of attractions and educational activities for children.

"Smyk" chain stores are located in the largest Polish cities. Since 2006, the company has entered foreign markets and is constantly growing. In 2011, the company began selling online via smyk.com. In 2015, the "multichannel retail" strategy was implemented, including the tight integration of an online store with a chain of all stores in Poland (including the "click and collect" functionality) (Izakowski, 2017).

Intensive development of the "Smyk" chain and more and more new outlets (in 2017 more than 140 stores), both in Poland and abroad, caused a rapid increase in the volume of goods served by the distribution center. "Smyk" serves clients through three distribution channels: stationary stores in Poland and abroad, franchise partners

outside Poland and an online store. Each channel has a different dynamics, assortment and service requirements, as well as seasonality conditioned by the climate and culture of a given market.

To ensure the efficiency of customer service processes, "Smyk" uses the logistics service of a specialized operator. The logistics operator provides services in the field of order processing in stores located throughout the country, as well as abroad, logistics services for goods available in "Smyk" stores, warehouse management and customs warehousing. The growing amount of manufactured goods, as well as the need to shorten working time are factors that have a significant impact on logistics processes. The needs and requirements of the market have led to the desire to include automated solutions in the processing of orders, allowing to achieve higher efficiency of processes. To meet the needs of increasing the efficiency of customer service processes, the logistics operator has implemented an automatic sorting machine for order picking for "Smyk". Thanks to this solution, more economical storage space management and better use of resources was achieved. At the same time, the increase in the efficiency of the process and the capacity of the warehouse did not result in the need to expand the warehouse space. Process automation also influenced the work of the selection team. The crew's tasks have become intuitive and the work is more ergonomic (Spedinex, 2017).

Thanks to modern solutions and integration of marketing and logistic processes, the customer has the opportunity to make convenient purchases 24 hours a day, anywhere and the ordered goods can be picked up at your own home, parcel locker or in a selected Smyk stationary store. Thanks to the personal collection of the product in the store, the customer does not have to pay for the shipment, which reduces his purchase cost.

Conclusions

Nowadays one can observe a tendency to an increasing level of integration of logistics and marketing, which in turn leads to the creation of an integrated concept of logistics and marketing management. For the enterprise it means incorporation of the logistics and marketing strategy into the overall strategy of operation and its application as the basic orientation in value chain management. The main goal of integrated logistics and marketing management is to achieve long-term customer satisfaction, which should at the same time contribute to the generation of long-term profits. As in the case of classic competitive strategies, the aim of this concept is to strengthen the market position and gain a competitive advantage by implementing the set goals and adapting to the changing environment. In achieving these goals, it is necessary to apply specific management instruments including both the classic (marketing mix and logistics mix) as well as modern tools such as: automation of warehouse processes, Electronic Point-of-Sale, effective customer service (ECR), comprehensive quality management (TQM), time-oriented management (TBM) or fast response.

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CHANGES TO THE BUSINESS BREAKDOWN STRUCTURE OF THE RAILWAY SECTOR IN THE EUROPEAN UNION IN THE PERIOD 1991–2016

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ABSTRACT The article discusses the main changes concerning business breakdown structure of the European Union railway sector in the period 1991–2016. Until the beginning of the 1990s, railway transport in all member states of today's European Union had been carried out by unified, integrated public-sector companies, whose actual monopolistic position was legally protected. The year 1991 constitutes the demarcation line that fundamentally outlines directions of changes in the management of railway undertakings laid down in Directive 91/440. During the first stage of implementation of the recommended changes, which had been taken place until the end of the 1990s, only such member states as Sweden, Great Britain and Germany undertook extensive reforms of their own railway sectors, while the other countries were rather hesitant to implement proposed changes. The other Member States, which implemented the recommended reforms of their railway sectors, would mainly choose the holding model. The institutional-breakdown structure of the railway sector, which completely differed from the one from 1991, had been implemented by the end of 2016. Moreover, independent, institutional regulators of the railway market had been selected in all member states. Railway infrastructure managers with specific status, operating on the basis of a dedicated-group of railway legislation, took over the management of publicly available railway infrastructure. On the other hand, the rail freight and passenger services were provided by numerous railway undertakings, both those created from the "old" railway monopolies, and those from the private sector. In essence, the European Union railway sector in the years 1991–2016 underwent a transition from a monopoly to a market.

Introduction

In the history of European rail transport provided on the area of the contemporary European Union, there can be distinguished several stages of development of railway undertakings, namely (Wielopolski, 1975, pp. 230–264):

– the stage of formation and operation of railway undertakings established as joint-stock companies with dominant private equity in the second half of the 19th century,

– the stage of development of mixed, public-private railway enterprises in the years 1880–1910,
– the stage of nationalization of railways that started in 1879 (the Kingdom of Prussia) and ended in 1948 (the United Kingdom).

It is worth pointing out that European railway undertakings were created on the basis of assets of the newly-created railway lines, as well as passenger and goods transport services provided on these lines with the use of the purchased rolling stock. With this specific mode of operation, they constituted – in the modern sense – integrated enterprises, which, as part of further evolution, expanded the scope of their activities by including various types of ancillary, supporting and social activities.

Due to the transition through the indicated stages of ownership changes, the period of several decades after the Second World War, until the end of the 1990s, was characterized by the domination of private sector in almost the entire European railway sector, as well as establishment of single, monopolistic national railway undertakings with an integrated structure in most countries. This integrated structure included combination of activities carried out by one entity, which concerned construction, maintenance and operation of infrastructure (railway lines); transport activities (freight and passenger transport); and many types of ancillary and supporting activities, such as energy and telecommunications, IT, infrastructure construction and renovation services, maintenance and repair of rolling stock services, social welfare activities for employees, as well as health and housing services.

The conditions for establishment of State railway monopoly in the past in the contemporary European Union countries, varied for countries from Western Europe[1] and Central and Eastern Europe.[2] A substantial proportion of the problems that occurred after several decades of functioning of monopolistic railway structures, had a common denominator – namely, constant unprofitability of provided business activities, due to, among others, tight state control of tariffs; lack of motivation to economize activities; an omnipotent political owner (state) making all important decisions, while the decision-making autonomy of management staff was substantially restricted; and use of railway undertakings to achieve socio-economic goals, such as employment of overstaffed personnel in them, and entrusting them with various state administration tasks, such as customs and sanitary, construction administration, pension systems and other services. In the countries of Western Europe, state railway monopolies encountered problems related to a cyclically growing debt, which had to be reduced by the owner every few years. Whereas, railway monopolies in Central and Eastern Europe countries did not run into debts, as the planned economy did not allow for that. Nevertheless, they struggled with constant insufficient transport capacity in regards to planned transport, shortage of all supply and intermediate goods, as well as showed significant technological development delays in relation to Western railways.

Table 1 lists integrated railway undertakings from the first half of the 1990s operating in the today's European Union countries, which monopolized the railway transport activity in those countries at the time.

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[1] In Western Europe, one of the arguments presented was that railway network constitutes natural monopoly characterized by many benefits of transport service. Moreover, an important argument for State railway monopoly were social (the state seeking to provide transport services for those areas of the country, where their provision would not be profitable for private enterprises) and political considerations (in some countries, political parties that favoured the nationalization of basic industries and transport were in power).

[2] In the sphere of influence of the Soviet Union after the Second World War, a dogma of the socio-economic superiority of state (social) ownership over private property was in force. Thus, State railway monopoly was a desirable and obvious form in this group of countries, primarily for ideological and political reasons.

Table 1. Integrated railway undertakings that monopolized the railway transport activity in the European Union countries at the time – as of January 1, 1992

Country	The year of accession to the European Union	Integrated railway undertaking	
		international symbol	full name
EU – 15 Group			
Belgium	1958	SNCB	Société nationale des chemins de fer belges – The National Railway Company of Belgium.
Germany	1958	DB*	Deutsche Bahn AG – The German Railway AG.
France	1958	SNCF	Société nationale des chemins de fer français – National society of French Railways.
Italy	1958	FS	Ferrovie dello Stato Italiane – Włoskie Koleje Państwowe The Italian State Railways.
Luxembourg	1958	CFL	Société Nationale des Chemins de Fer Luxembourgeois – The Luxembourg National Railway Company.
The Netherlands	1958	NS	Nederlandse Spoorwegen N.V. – The Dutch Railways.
Denmark	1973	DSB	Danske Statsbaner – The Danish State Railways.
Ireland	1973	IE	Iarnród Éireann – Irish Rail.
Great Britain	1973	BR NIR	British Rail Northern Ireland Railways.
Greece	1981	OSE	Organismós Sidirodrómon Elládos (Οργανισμός Σιδηροδρόμων Ελλάδος) – The Hellenic Railways Organisation.
Spain	1986	RENFE	Red Nacional de los Ferrocarriles Españoles – The National Network of Spanish Railways.
Portugal	1986	CP	Comboios de Portugal, Entidade Pública Empresarial – The Portuguese Railways, a state-owned company.
Austria	1995	ÖBB	Österreichische Bundesbahnen – The Austrian Federal Railways.
Finland	1995	VR	Valtionrautatiet – Government-owned railway.
Sweden	1995	SJ**	Statens Järnvägar – Government-owned railway
EU – 13 Group			
The Czech Republic	2004	ČD***	České dráhy – Czech Railways.
Estonia	2004	EVR	Eesti Raudtee – Estonian Railways.
Hungary	2004	MAV	Magyar Államvasutak – The Hungarian State Railways.
Lithuania	2004	LG	Lietuvos geležinkeliai – Lithuanian Railways.
Latvia	2004	LDZ	Latvijas dzelzceļš – Latvian Railways.
Poland	2004	PKP	Polskie Koleje Państwowe – The Polish State Railways.
Slovenia	2004	SŽ	Slovenske železnice – Slovenian Railways.
Slovakia	2004	ŽSR***	Železnice Slovenskej Republiky – Railways of the Slovak Republic.
Bulgaria	2007	BDŻ	Български държавни железници – The Bulgarian State Railways.
Romania	2007	CFR	Căile Ferate Române – The National Society of Romanian Railways.
Croatia	2013	HŽ	Hrvatske željeznice – The Croatian Railways

* The German Railway DB was created as a result of the merger of the former German railways Deutsche Reichsbahn and the German Federal Republic Deutsche Bundesbahn in 1994.

** Starting from 1989, the process of successive transfer of railway infrastructure from SJ to the state office Banverket ended in 1996.

*** ČD and ŽSR were created in the form of integrated railway companies as a result of the division of former Czechoslovak State Railways ČSD in 1993

Source: own study based on data from the websites of the mentioned railway undertakings or their legal successors.

The new market governance in the European railway sector after 1991

The new market governance of the railway sector after 1991 was shaped by subsequent adoption of directives, which included recommendations for mandatory implementation of the railway laws by Member States, and the

regulations of the European Parliament and the Council, which took precedence over the laws of these countries. Furthermore, the European Commission issued its own implementing regulations and decisions, as well as other documents of informative and order nature.

In 1991, the economic policy representatives of the European Economic Community (EEC) of that time, decided to carry out fundamental reforms of the railway sector in the entire group, based on the guidelines presented in Directive 91/440 of July 1991.[3] The Directive contained four groups of fundamental recommendations for Member States, which can be identified as pillars of the new market governance in the European railway sector.

The first pillar concerns guaranteeing the independence of the management of railway undertakings, establishment of a management system appropriate for commercial companies, and improvement of the financial structure of railway undertakings. The second pillar separates railway infrastructure management functions from the operation functions (transport operations) in railway undertakings. The third pillar regards implementation of the provision concerning payment for access to railway infrastructure services, whereas the forth provides international groups of railway undertakings and railway undertakings that offer combined transport of goods, with access to the network of the Member States.

Despite the formally announced policy of demonopolization and liberalization of the EU railway sector and the incentives presented by the European Commission, Member States were initially reluctant to implement the recommended reforms. In the first half of the 1990s, only two countries decided on the fundamental reforms of their own railway sector, namely Sweden, which started reforms while remaining outside the EEC, and the United Kingdom. In case of Sweden, the implementation of railway reforms in 1989, that is two years before the adoption of Directive 91/440, resulted in the creation of a government agency called Banverket, which until 1996 had successively taken over railway network management, rail operation, as well as the allocation of infrastructure potential, and charging for access to infrastructure, determined on the basis of marginal costs.[4]

Banverket, as the budgetary unit of the Swedish government, was in no way related to the old "entrenched" state railway company SJ. In 2010, the office responsible for the construction and maintenance of the basic transport infrastructure in Sweden, under the name Trafikverket, took over the management of the Swedish railway infrastructure. In 1997, after an over-all transfer of functions concerning maintenance and management of railway infrastructure, a divisional management structure of the other railway areas was introduced in the "old" SJ company. In 2001, the structure constituted the basis for creation of six new railway undertakings, such as SJ AB – interregional passenger transport, Green Cargo AB – freight transport, Jernhusen AB – railway properties, EuroMaint AB – rolling stock maintenance, TrafficCare AB – maintenance of stations and passenger train service, Unigrid AB – IT infrastructure and logistics.

Despite the clear guidelines as to the main directions of changes in the European railways that were formed in mid-1991, the reforms of the Swedish railways, which were widely publicised in the European railway management, did not push for reform in the countries of the European Union of that time. Moreover, Continental Europe was rather distanced and awaited further, more precise recommendations of the European Commission, and did not demonstrate the will to implement railway reforms.

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[3] Directive 91/440/EEC on the development of the Community's railways – the Official Journal of the European Communities of 1991, L 237/25.

[4] For more information on the railway reform in Sweden see A. Mężyk (2011), pp. 215–329.

A country that refused to follow this conservative approach was Great Britain, where a broad public discussion on the possible privatization of the entire state railway sector (Patterson, 1997, pp. 33–39, after Mężyk, 2011, p. 242), undoubtedly inspired by liberal – conservative economic politicians, had been taking place since 1989. The preparatory work on the reform of the British Railways resulted in Railway Act[5], which entered into force in April 1994. Then, in the years 1994–1996, the "old" British Railways (BR) company was completely divided[6]. In the first place, Railtrack company, that would serve as the manager of infrastructure, was created. Its shares were listed on the stock exchange in 1996, which meant full privatization of the manager of publicly available railway infrastructure. This was undoubtedly an unprecedented step in the history of the European railways. In addition to the railway infrastructure manager, from BR there were also distinguished 13 companies responsible for maintenance (Infrastructure Maintenance Companieis – IMC) and renewal of the infrastructure (Track Renewal Companies – TRC), as well as 6 rail freight operators (Freight Operating Companies – FOC). In the scope of passenger transport, 25 transport service areas were created, which, in the first stage of the reform, were allocated on the basis of a temporary franchise after conducting tender procedures for the same number of railway undertakings (Train Operating Companies – TOC). Furthermore, passenger rolling stock of BR was divided among 3 newly created companies (Rolling Stock Companies – ROSCO), whose aim was to rent and lease tractive rolling stock and carriages for operators of passenger transport. In later years, most of the railway and ancillary enterprises created in this way were privatized. Finally, the period of the railway infrastructure manager privatization was quite unfortunate. In October 2002, Railtrack, a listed company, had to announce forced self-liquidating[7] due to high indebtedness and inability to absorb costs necessary to modernize the railway infrastructure required due to tightened safety regulations. The company was finally taken over (again) by the public administration, and its assets were transferred to a newly created non-profit company, acting as the manager of the publicly available railway infrastructure, under the name Network Rail. The company included in its structure previously separated and sold companies dealing with maintaining and renewing the IMC and TRC infrastructure.

The main models of the breakdown structure of the railway sector in the European Union

A few years after the introduction of the Swedish and British reforms, the European Union countries adopted the term "Swedish model" for solutions that involved, among others, creation of the state office managing the

[5] www.legislation.gov.uk/ukpga/1993/43/introduction (3.08.2017).

[6] The processes of reform of the British Railways are discussed in more detail by: Mężyk (2011), pp. 240–276.

[7] Since its establishment, Railtrack (1994 – 2002) was supposed to be a fully commercial company, maintained by fees borne by rail carriers for access to railway infrastructure. In the first years of its functioning, this way of financing the company's business activities provided high profits, which was one of the arguments for introducing its shares on London stock exchange. Since the market capitalization of Railtrack was very high in the period 1996 – 2001, it was included in the FTSE 100, the most important index of London Stock Exchange. In 2001, Railtrack paid its shareholders a high dividend in the amount of GBP 137 million, although the company was already seriously indebted for the sum of GBP 534 million. Heavy indebtedness was the result of significantly increased costs of renovation needs, when compared to the original plans, of one of the most important railways in the UK, namely West Coast Main Line, estimated at GBP 7.5 billion, as well as additional costs resulting from stricter safety regulations, after a series of spectacular railway accidents in 1997 – 2000. The British government, noticing the threats resulting from the potential bankruptcy of Raitrack, and being under the pressure of public opinion displaying negative attitude towards the private railway infrastructure manager, created Network Rail company, which at the beginning of October 2002 took over the capital of Railtrack. Then, the majority shareholders of Railtrack announced the company's liquidation, offering a purchase of its shares at PLN 2.62 per each. After court disputes with groups of shareholders, who demanded a much larger amount per share, Railtrack was finally liquidated. Cited after.: www.de.wikipedia.org/wiki/Railtrack (3.08.2017).

railway infrastructure, and a few transport and ancillary undertakings from the remaining part of the "old railway". Another introduced term was the "British model" used for solutions that concerned assignment of the infrastructure manager from the "old" railway undertaking and its privatization through the stock market, as well as the division of the remaining integrated company in the manner described above.

Interestingly, the "Swedish model" has been successfully used to the present day by such countries as, among others, Bulgaria, Denmark, Spain, Finland, Greece, the Netherlands, Portugal, Romania and Slovakia, when introducing reforms of the railway sector (Kurzfassung…, 2011, p. 15). Whereas, the "British model" in its initial form has already ceased to exist. The railway infrastructure manager in the United Kingdom underwent renationalisation in 2002, and since then, no country in the European Union has announced any attempts to privatize the managers of the publicly available railway infrastructure. In the scope of the operation of the railway infrastructure manager, Great Brittan introduced the "Swedish model", although with the exception that the infrastructure manager, instead of being a public office, is a non-profit public company with no privatization capacity.

In the second half of the 1990s, the first experiences, advantages and disadvantages, as well as doubts related to reforms of the railway sector in Sweden and Great Britain were already known in the European Union. However, the European Commission did not focus on model solutions from these countries, all the more so since two new models of restructuring "old" railway undertakings and railway infrastructure management were created on the basis of the provisions of Directive 91/440, namely: "holding model" also known as "German model", and the quite original "French model", later called the "hybrid model".

The latter involved creation of a public unit, which formally took over the assets and liabilities of the old integrated railway undertaking, and then entrusted the management of assets (railway infrastructure) to the same railway company that previously managed the infrastructure. In 1997, the so-called Public Industrial and Commercial Unit under the name French Rail Network (RFF – Resean Ferre de France) was created. The ownership of the railway infrastructure was transferred onto RFF together with SNCF's indebtedness in the amount of over EUR 20 billion for implementation of infrastructure investments. As part of this model, RFF acted as the owner during the construction, modernization and maintenance of infrastructure operations. Whereas, the company that was managing the traffic and maintaining the railway network was SNCF. All passenger, regional and interregional, as well as freight transport services in this restructuring model were still provided by SNCF, together with many other types of supporting and ancillary activities. In general, the reform of the "old" railway undertaking in the French hybrid model was carried out in such a way so that it would not include institutional division of a railway undertaking into infrastructure and operation areas, and, at the same time, SNCF would have its debt cancelled and still maintained control over all railway activities[8]. Moreover, the French model of the reform of the state railway sector, the essence of which was to maintain the SNCF monopoly and which was adopted under the pressure of railway trade unions, was the subject of criticism from the European Commission and other European Union countries. It was widely assessed that France, by formally transferring the ownership of railway infrastructure to RFF and then entrusting its management to SNCF railway undertaking, which monopolized railway transport in this country, bypassed the recommendations presented in Directive 91/440 in this respect. It is worth adding that a solution similar to the French proposal for the operation of the manager of the publicly available railway infrastructure was adopted in the Czech Republic (Kurzfassung…, 2011).

[8] The processes of the French railway reform are discussed by: Mężyk (2011), pp. 317–342.

The holding model of the state railway sector restructuration was first created in 1999 in Germany and then reproduced in Austria, Belgium, Estonia, the Netherlands, Ireland, Lithuania, Luxembourg, Latvia, Poland, Slovenia and Italy (Kurzfassung…, 2011). It involves the initial transformation of an "old" integrated railway undertaking into a commercial company, which is in 100% state-owned, and then hiving-off the whole railway infrastructure from this company into another commercial law company that is in 100% owned by the transformed railway undertaking. Such creation of a holding of railway undertakings requires that not only railway infrastructure, but also the transport activity of the "old" railway undertaking, as well as various ancillary activities, are separated into individual companies. This type of holding, under German law known as a group, was created in Germany, where in 1999 another company called DB Netz AG was carved out from the established in 1994, state-owned company Deutsche Bahn AG, and operated as a manager of publicly available infrastructure. Other spin-off transport companies included DB Cargo, DB Regio, DB Fernverkehr and other ancillary and supporting companies, of which the parent company, the Deutsche Bahn AG, remained the 100% owner[9]. It should be added that all companies from Deutsche Bahn AG group operate in accordance with German corporate law, which includes single management of a company, free untaxed transfers of profits between companies, as well as free flow of capital injection of individual companies (lending credits to each other)

The main discussed models of changes in the breakdown structure of the state railway sector have undoubtedly contributed to comprehensive sectoral reforms in the vast majority of European Union countries. Although these reforms were slowed down in the 1990s due to the lack of many detailed regulations regarding the functioning of the railway sector, they were significantly accelerated in the 2000s. A particular catalyst for railway reforms was the so-called first railway package from 2001, and the subsequent railway packages, as well as consolidation of European Union directives regarding the desired institutional and market governance in the EU rail sector in 2012.

The breakdown-institutional governance in the EU railway sector

The result of changes in the railway sector, taking place in the last quarter of a century, starting from 1991 until 2016, is the business breakdown-institutional structure of the railway sector in the entire European Union, which is substantially different from the structure from the first half of the 1990s. In all European Union countries, there have been established institutional railway market regulators in accordance with the relevant directives. The manager of publicly available railway infrastructure has been selected in every European Union country – see Table 2. A uniformed licensing system of railway undertakings (operators) is applicable throughout the entire European Union, where majority of countries allowed independent rail operators, who do not come from the transformation of "old" or so-called "entrenched" railway undertakings, to enter the railway sector. It is worth noting in this context that, so far, only the English model included such a far-reaching division of an "old" railway undertaking, which concerned transformation and subsequent privatization of all its structural and tangible components, including the old name. Whereas, in most of the European Union countries, the "old" railway undertakings were subject to evolutionary and "gentle" transformations that included separation of the infrastructure, passenger and freight transport and various ancillary activities. At the same time, new enterprises were allowed to enter the railway sector, creating conditions for intra-industry competition. Therefore, in the majority of the European Union countries, there currently operate both railway undertakings continuing provision of services of their large, integrated predecessors in the field

[9] The reforms of the German Railways are described in details by: Mężyk (2011), pp. 277–316.

of passenger and freight transport, as well as enterprises newly created by owners who are recruited mainly from heavy industry (e.g. from mining, metallurgy, chemical or paper industries) or the forwarding and logistics sector.

Table 2. The main managers of the publicly available railway infrastructure in the European Union countries – as of the end of 2016

Country	Abbreviation	Full Name	Length of managed railway lines (km)
		EU – 15 Group	
Belgium	INFRABEL	Le gestionnaire de *l'infrastructure ferroviaire* belge	3,631
Germany	DB Netz AG	Deutsche Bahn Netz AG	33,281
France	SNCF Réseau	Société nationale des chemins de fer français – Réseau	29,213
	LISEA – LGV SEA Tours-Bordeaux	Ligne à Grande Vitesse Sud Europe Atlantique	340 (HS)
Italy	RFI	Rete Ferroviaria Italiana	24,278
Luxembourg	CFL	Société Nationale des Chemins de Fer Luxembourgeois	275
The Netherlands	ProRail	ProRail B.V.	7,028
Denmark	BDK Banedanmark	Banedanmark Rail Net Denmark	2,132
Ireland	IR	Iarnród Éireann	2,400
Great Britain	NR	Network Rail	15,779
	HS1	HighSpeed1 Ltd.	109
Greece	OSE	Organismós Sidirodrómon Elládos	2,238
Spain	ADIF	Administrador de Infraestructuras Ferroviarias	15,326
Spain/France	LFP Perthus	Linea Figueras Perpignan SA	44 (HS)
Portugal	Infraestruturas de Portugal	Infraestruturas de Portugal, SA	2,553
Austria	ÖBB INFRA	Österreichische Bundesbahnen (ÖBB) – Infrastruktur AG	4,846
Finland	Liikennevirasto	Liikennevirasto	5944
Sweden	Trafikverket	Trafikverket	12,000
		EU – 13 Group	
The Czech Republic	SŽDC	Správa zeleznicní dopravní cesty	9,459
Estonia	EVR	Eesti Raudtee	1,200
Hungary	MÁV	Magyar Államvasutak Zrt.	7,273
Hungary/Austria	GYSEV/Raaberbahn	Győr-Sopron-Ebenfurti Vasút Zrt. Raab-Oedenburg-Ebenfurter Eisenbahn AG	509
Lithuania	LG	Lietuvos Geležinkeliai AB	1,868
Latvia	LDz infrastruktūra	Latvijas dzelzceļš	1,860
Poland	PLK	PKP Polskie Linie Kolejowe SA	18,427
Slovenia	Slovenske železnice	Slovenske železnice- Infrastruktura, d.o.o.	1,228
Slovakia	ŽSR	Železnice Slovenskej Republiky	3,624
Bulgaria	NRIC – НКЖИ	Национална компания „Железопътна инфраструктура"	4,023
Romania	CFR	Compania Naţională de Căi Ferate SA'	10,600
Croatia	HŽ Infrastruktura	Hrvatske željeznice Infrastruktura	2,605

Source: own work based on: www.raileurope.com and www.ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2016.

Table 3 presents the numbers of active railway operators (railway undertakings) in the European Union Member States according to data from the end of 2015. The data presented in Table 3, when compared with the data from Table 1, reflects the general changes in the structure of the railway sector, which took place over the years 1991–2016. If compared to the small number of integrated railway companies in the first half of the 1990s, the

number of 750 active licensed companies in the railway sector shows metaphorically the path that the EU railway sector has taken from the branch monopoly to the market. The transition to the market in conditions of competition, did not, however, take place in all the European Union countries in the same way. The data presented in the table clearly shows that apart from countries with very large (Germany, Poland, the Czech Republic) or a large number of active licensed railway operators (Slovakia, Austria, Great Britain, Italy) and the alleged relatively strong intra-industry competition, there are countries which, according to the data, still maintain the railway branch monopoly. This particularly applies to countries with broad-gauge lines, such as Lithuania, Latvia, Ireland, Finland, Portugal, but also Luxembourg, Greece and Romania. It is also worth paying attention to over double the number of active rail freight operators in relation to passenger transport operators at the end of 2015.

Table 3. The number of active licensed railway undertakings in the European Union – as of the end of 2015

Country	Rail freight operators	Passenger and freight rail operators	Passenger operators	Active licensed railway undertakings in total
Germany	140	30	107	277
Poland	67	0	15	82
The Czech Republic	47	12	0	59
Slovakia	39	0	4	43
Austria	22	9	6	37
Great Britain	8	0	26	34
Italy	15	4	13	32
France	24	1	4	29
The Netherlands	21	0	8	29
Sweden	11	2	10	23
Estonia	13	1	2	16
Denmark	5	0	10	15
Belgium	10	0	3	13
Hungary	10	2	0	12
Bulgaria	11	0	1	12
Spain	10	0	1	11
Croatia	5	0	1	6
Latvia	2	1	1	4
Slovenia	3	0	1	4
Romania	1	1	1	3
Greece	0	1	1	2
Luxembourg	1	0	1	2
Portugal	0	1	1	2
Finland	0	1	0	1
Ireland	0	1	0	1
Lithuania	0	1	0	1
Total	465	68	217	750

Source: Fifth Annual Market Monitoring Report (2017), p. 62.

Freight and passenger transport are two different railway markets. In the former, it is easier to break up a branch monopoly and introduce true competition to the sector by the emergence of new entities. Hence, thanks to the liberalized rules of entry into the railway sector, many new players appeared in it. On the other hand, it is a more

complex process to introduce conditions of true internal competition in the rail passenger transport. Therefore, there are significantly fewer European countries with higher number of passenger transport operators. At the end of 2015, the total number of real rail passenger transport undertakings operating in the entire EU market reached the level of 285 (217 + 68), of which 137 (over 48%) operated only in Germany, which is an unprecedented case. However, 26 such carriers operated in Great Britain, 17 in Italy, 15 in Poland and in Austria respectively, 12 in Sweden and the Czech Republic respectively, and 8 in the Netherlands. The greater number of passenger rail carriers in individual Member States can be considered a positive effect of the liberalization of the railway sector. As a result, real competition mechanisms are introduced, at least partially, on the rail passenger transport market.

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DIFFUSION OF INNOVATION AS A CONSEQUENCE OF UTILIZATION OF EU FUNDS BY COMPANIES

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Abstract The article points to diffusion of innovation as a consequence of popularization and dissemination of the results of projects implemented with the help of the Structural Funds. Attention has been paid to the progressive nature of the diffusion process. It is a kind of transformation that contributes to accelerated changes in structure and function within the business ecosystem, as a result of the adoption or rejection of a given innovation. The diffusion process involves not only the spread, but also popularization of innovation. The innovations resulting from the involvement of public funds, which impose additional restrictions on undertakings promoting the solutions developed in the regional and national system, play an important role in this process.

Introduction

In order to increase the level of innovation in the economy, it is essential that new solutions developed and used by business entities, scientific units and other business environment institutions are disseminated and made available to the public, and used as widely as possible to improve the competitiveness of the economy. With the widespread access to innovation, it is also possible to create new solutions based on it, to develop new applications,

and for the innovator, to profit from its use. Diffusion of innovation in the economy enables intensive, ongoing cooperation between authors and beneficiaries of innovative solutions. As illustrated by the example of economically developed countries (Brodzicki, Dzierżanowski, Erlandsson, Szultka, 2004), co-operation contributes to achieving results that are often inaccessible to individual entities.

The aim of the study is to identify tools for the diffusion of innovations used by entrepreneurs – beneficiaries of public support offered under Measure 5.2 of the Operational Program Innovative Economy 2007–2013. The paper was financed from the funds allocated to the Faculty of Management at the Cracow University of Economics, as part of a grant to support research capacity.

Literature review

In today's economy, the flow of different resources between organizations is a common phenomenon. Described by the term diffusion, it is applied in the social sciences, including management sciences. In organization management, diffusion refers to knowledge and information, innovation and the concept of management (Banaś, 2013, pp. 9–10). Diffusion means not only the transfer of knowledge and practical experience between organizations, but the transfer based on conversion, i.e. transformation and adaptation of certain solutions.

Among the benefits of diffusion are: the opportunity to share knowledge about proven technical and organizational solutions, and assistance in obtaining information. The protection of intellectual property (Lachiewicz, Matejun, 2012, p. 118) is a barrier to the diffusion of modern solutions, especially technical and technological in nature.

Today, diffusion is used in innovation management. Diffusion of innovation is a process of rational transfer of proven methods and results of innovative processes from one organization to another, and their dissemination (Lachiewicz, Zakrzewska-Bielawska, 2016, pp. 146–147).

Diffusion of innovation may consist of spreading a new, previously unknown technology, product, or management method within a group of potential users (Jagodziński Ostrowski, 2013, p. 110). It is characterized by spontaneity, i.e. when an invention arrives on the market, it is adapted by users over time. The problem of spontaneity as an immanent feature of diffusion is the study object of various authors in the management sciences. Dobija points out that that the original understanding of the laws of thermodynamics, indicating the inevitability of spontaneous energy dissipation, expresses the correctness of all sciences, including economics (Dobija, 2007, p. 184).

Literature sources name many models of diffusion of innovation (Jagodziński, Ostrowski, 2013). Among the most often analyzed is the model proposed by Bass and Rogers. The Bass diffusion model describes the process of innovation users' increment and assumes that the entire market will adopt the innovation. This process is influenced by the innovation factor, which reflects the importance of marketing activities and the imitation factor, taking into account the impact of user observation and duplication of innovation.

On the other hand, the Rogers model describes the diffusion of innovation by dividing innovation users into separate groups (Jagodziński, Ostrowski, 2013, pp. 113–114). The first group is the innovators, i.e. first users of innovations; they are interested in novelties, but are bored quickly. The second group are early adopters who take the risk of introducing the innovation and expect benefits. The third group is the early majority who expect proven innovation, and the fourth is the so-called late majority, who adopt the innovation over time. The last group of imitators is laggards, who are reluctant to innovate (Rogers, Singhal, Quinlann, 2009).

In theoretical sources, the diffusion of innovation is viewed as a welcome complement to innovation, as the efficiency of the implementation of the new solution increases with the number of imitators who introduce the

innovation (Jasiński, 2006, p. 10). The sources of innovation can thus be sought in the transfer of technology and research (Stawasz, 1999, pp. 37–41).

The diffusion of innovation begins when the imitators begin to use a given technology or to manufacture a given product (Janasz, 2004, p. 62). Diffusion may relate to the company itself – it is then referred to as internal diffusion – or and the environment; in the latter case we are dealing with external diffusion. As a result of long-term practice, experience, own rationalization ideas and improvements, employees gain unique knowledge. Internal diffusion should make this knowledge more available to other employees. Internal diffusion can also take place on the basis of own research conducted by an organization (Buszko, 2013, p. 29).

It should be noted that diffusion is a time-consuming, long-lasting process, especially in the case of radical and international innovations (Brzeziński, 2001, p. 105). However, taking into account the time dimension, diffusion of innovation, allows to skip the time needed to obtain R&D innovation and related costs that the company would not be able to afford.

Method

In the period of 2013–2016, our own research was carried out, aimed at acquiring source information on diffusion of innovations used by 68 entrepreneurs – beneficiaries of the Polish Agency for Enterprise Development (PARP) system project "KSI KSU Advisory for Innovative" within Measure 5.2 "Supporting business environment institutions providing pro-innovative services and their networks of supra-regional importance "of the Operational Program Innovative Economy. Two study periods have been identified in the study structure, covering the years 2013–2014 and 2015–2016, respectively. Owners/managers were asked to identify tools of innovation diffusion used by the company and their suitability for enhancing the organization's competitiveness. In the process of selecting a research sample, a targeted selection was carried out from among the beneficiary companies of the pro-innovative services from the Małopolskie Voivodship. This study was conducted using the following research methods and techniques: CAPI and IDI.

Based on the section of the Polish Classification of Activities (PKD 2007), the selection of the sample varied in terms of sections: C, F, G, J, M, P, Q (Table 1).

Table 1. Companies surveyed according to the sections of PKD 2007

Section	PKD No.	Participation in the studied structure (%)
C – Industrial processing	32.12.Z Manufacture of jewelery and related articles	2.94
F – Construction	43.12.Z Preparation of the construction site	14.71
G – Wholesale and retail trade; repair of motor vehicles, including motorcycles	45.32.Z Retail sale of parts and accessories for motor vehicles, except motorcycles	7.35
J – Information and communication	62.01.Z Computer software programming services	17.65
M – Professional, scientific and technical activities	71.12.Z Engineering activities and related technical consultancy	19.12
P – Education	85.59.A Teaching foreign languages	10.28
Q – Health care and medical assistance	86.22.Z Specialist medical practice	13.24
	86.90.E – Other health care activities, not elsewhere classified,	14.71

Source: own study based on own analysis.

Of all the surveyed companies, 57% were based in a municipality (43% in Krakow, 6% in Tarnów, 9% in Nowy Sącz). The remaining 43% were entrepreneurs operating in the districts: Krakowski (15%), Nowosądecki (12%), Bochenski (4%), Wadowicki (3%), Brzeski (3%), Limanowski (6%).

Entrepreneurs targeted in Action 5.2 received support for a relatively short period of time, and in many cases benefited from a one-off service, typically consulting or training (entrepreneurs reported a specific problem they wanted to solve to the institution, and after receiving support did not continue the cooperation). In deciding to use the services of the Business Environment Institute (Gródek-Szostak, Kajrunajtys, Chęcińska-Zaucha, 2016), they were guided by the broadly understood need for company development, including the area of innovation.

Support under the 5th priority axis Diffusion of innovation PO-IG 20107–2013

Support under the 5th Priority Axis was intended for the development of trans-regional cooperation links, including joint ventures of advisory and investment nature in particular, which contribute to the ease of transfer and diffusion of knowledge and innovation between cooperating entities. The main addressee of the support provided, contributing to the increase of cooperation between entrepreneurs (Figure 1) and between entrepreneurs and research centers were micro-, small and medium-sized enterprises (SMEs).

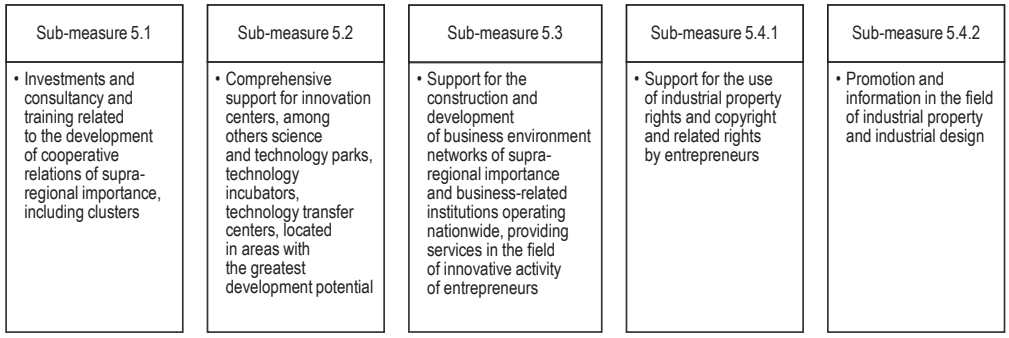


Figure 1. Support structure for diffusion of innovation in the 5th axis of the Priority Operational Program Innovative Economy 2007–2013

Source: own study based on Operational Program Innovative Economy 2007–2013.

The main objective of Measure 5.2 was to facilitate access of entrepreneurs across the country to complex, high-quality business services that are essential for innovation.

According to the standard, the pro-innovation consulting service (Gródek-Szostak, 2016; Jaki, Gródek-Szostak, 2017) covered two stages of support – Table 2.

Table 2. Support structure under Measure 5.2 "Support for business environment institutions providing pro-innovative services and their networks of supra-regional importance

Stage I	Stage II
Consulting in the area of innovation implementation in order to develop an enterprise by improving existing or implementing a new product (product or service), process, marketing methodology or organization methodology in terms of operating principles, organization of the workplace or environmental relations, which is providing the information and procedures necessary for one entity to duplicate the work of another, or to use solutions owned by another entity, or to apply new solutions designed for their needs by another entity	Dedicated entrepreneur support. The scope of Stage II included 15 elements: D1: Analysis of alternative development paths; D2: Specification of the chosen development path; D3: Developing a detailed financial model with a scenario analysis and qualitative factors for the financial model; D4: Identification of possible technology implementations; D5: Seeking and establishing contact with the technology provider; D6: Support in the development of functional documentation; D7: Preparation of negotiations with the technology supplier and supporting the negotiation process with the technology provider; D8: Support in preparation of the contract and a final verification of its wording; D9: Developing a detailed implementation plan with a risk analysis; D10: Support in pilot implementation of the solution; D11: Support in implementing the complete solution; D12: Analysis of the impact of implementation on the environment; D13: Support in the human resources development project and the creation of an incentive system; D14: Support for the management of intellectual property; D15: Preparation of intellectual property management strategies

Source: own study.

The result of Stage II was undertaking cooperation with another entity (confirmed by the parties by signing a relevant agreement), in particular a research unit (as understood by the regulations on financing science), aiming at developing an innovative solution (including modernization or significant improvement of the solution already owned by the entrepreneur) for the sole needs of that entrepreneur, or the entrepreneur's acquisition of an innovative solution or the right to use it in a business activity (in particular machinery or equipment) from another entity, in particular a scientific unit (confirmed with a contract).

Results

Using highly specialized pro-innovation services was the basis for the diffusion of innovations introduced into a company's business practices. The catalog of forms of innovation dissemination (diffusion) identified by the respondents in their enterprises is presented in Figure 2.

The flow of silent knowledge (sharing knowledge and experience, especially in the area of technology, collaborative learning) and the demonstration effect (watching other companies' actions and mutual motivation) both have a great impact on the development of innovation in the supported cooperative relationships.

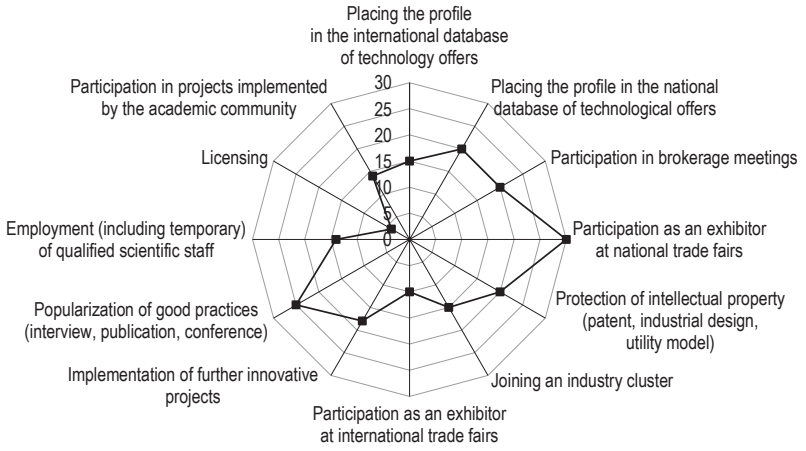


Figure 2. Forms of innovation dissemination in the study group

Source: own study.

Almost half of the surveyed companies (48%) noted a positive impact of the support received under Measure 5.2 on the development of innovation. According to the respondents, the service that was most influenced by the development of innovations in companies was a technological audit (Gródek-Szostak, Kajrunajtys, 2010) combined with specialized consulting services.

Conclusions

The diffusion of innovation in the analyzed companies varied in form. The least of them (less than 5%) indicated licensing as the chosen and realized form; 20% of the respondents patented their products, though most of them haven't planned it due to procedural barriers, which were ultimately overcome by their involvement in advisory services. Approximately 30% of respondents indicated that they participated in national trade fairs as exhibitors as a result of consulting services. It required planning the form of presenting their own innovative solutions, producing information materials and the exhibition booth itself. For many business entities, especially small ones, this was a venture they would not undertake without the support of an external, directing action. Approximately 25% of the indications pointed to the engagement in the popularization of best practices (interview, publication, conference), which required not only the preparation of information materials but above all, overcoming resistance to such activity and the proper planning of time. This is particularly valuable for small businesses as such engagement interferes with their basic operational activities. As a result of project participation, approx. 14% of the respondents decided to establish and launch cooperation with the academic community in their projects.

The collected conclusions described above, together with the extensive material collected during the follow-up interview provide a noticeable added value to the ongoing debate on the various aspects of innovation and management.

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ACTIVITIES OF LOCAL GOVERNMENT AT STIMULATING INNOVATIVENESS IN THE LEARNING REGION – STUDY OF LESSER POLAND VOIVODESHIP

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ABSTRACT

The main subject considered in this article is the idea of a "learning" region and if the Małopolskie Voivodship has the features, which allow to consider it as a such. The analysis of the statistical data for the years 2007–2016 has led to the conclusion that such a term is legitimate with regard to the Małopolskie Voivodship. It is necessary, however, to take into consideration that it is the capital city of the region, Kraków, that is the main contributor, as the infrastructure supporting knowledge and innovativeness is concentrated mainly within the borders of the Kraków Metropolitan Area.

Introduction

As paradoxical as it may seem, the globalization processes are becoming the means of growth on the regional scale, providing resources for stimulating, creating and developing local innovative processes. The experiences of participants of these processes result in an increasingly popular perception of the innovative processes as complex (systemic) phenomena, which confirms some degree of readiness to co-operate on the regional scale.

These activities include e.g.: the involvement of regional or local authorities, which create a favourable atmosphere and provide basic infrastructure, the activity of local research units, as well as the presence of centres for supporting entrepreneurship (business support institutions) and companies which operate independently, or as a network. One proposition says that „with a combination of factors enabling advantageous participation in a global economy, regions are a natural area for economic activities in a globalized world" (Godowska, 2012, pp. 278–286.).

The main aim of this study is to identify the situation of the Malopolskie Voivodship in the scope of the years 2007–2016 as an area where the local government carries out effective actions in order to stimulate innovativeness. The first part of the article explains the concept of a "learning" region and innovativeness in terms of regions. Next, the study discusses the essence of regional innovation and presents the basic statistical characteristics of the Malopolskie Voivodship, followed by its analysis and conclusions. The paper was financed from the funds allocated to the Faculty of Management at the Cracow University of Economics, as part of a grant to support research capacity.

The concept of the learning region – a literature review

Richard Florida's concept of "learning" regions is based on an assumption that the ability to create specific and strategic resources is crucial for the competitiveness of an area (Jewtuchowicz, 2005, p. 123). The issue of the learning region is the subject of discussion for researchers who have already tried to define it (Table 1). In most of the studies, the authors refer to the article by Florida, considered a precursor of the term. According to him, a learning region should be understood as storage of knowledge and ideas that provides the appropriate environment and infrastructure to facilitate the flow of knowledge, ideas and learning (Florida, 1995).

Table 1. The review of the „learning region" definitions

Author	Definition characteristics for „learning region"
OECD	A region with a dense network of companies co-operating with the higher education and research sector institutions; politics are based mainly on the creating structures for regional clusters, for a connection between business and science, as well as on promoting social implication and working through the lifelong learning process
Olivier Torrès	Competitiveness factors, which influence on global competitiveness (innovativeness, flexibility, network strategies, acquisition of knowledge, entrepreneurship) will be settled in a local development conditions
Leo Baumfeld	Three dimensions of learning region: – measured activities for supporting citizens education, – measured activities in order to enhance and make a network for educational skills of the region (schools, universities, vocational education) for brightening educational insfrastructure and broadening regional base of knowledge, – constant investments in order to integrate education subsystems in the region for building permanent process of the common learning and innovations
Andrzej Klasik, Florian Kuźnik	It is the knowledge, experience and competences area, considered in four perspectives: cohesion's, capital, adaptive and future
Roel Rutten, Frans Boekema	Regional players are concerned in a cooperation and coordination for common benefits, which lead to regional learning process. Region features influence the degree to which regional learning process contributes to regional renovation

Source: OECD (2002), p. 38; Torrès (2004), pp. 23–41; Baumfeld (2005), pp. 39–51; Klasik, Kuźnik (2007), pp. 9–28; Rutten, Boekema (2007), pp. 127–142; Czyżewska (2012), pp. 32–50.

Learning is the most important process taking place within a learning region. It allows organizations to develop structures and systems more adjusted to the changes in a turbulent environment (Marszałek, 2011, pp. 51–70;

Domański 2001, pp. 69–70; Kajrunajtys, 2016, pp. 124–140). As part of work in the field of learning at the regional level, the necessity to learn as an element conditioning the creation of innovation is emphasized (Pietrzyk, 2000, pp. 28–30).

It should be noted that the question of a region's "learning" is treated as a metaphorical term, for it is individuals or organizations, as a part of regions, that participate in the learning processes, and not the regions considered as an entirety (Wink, 2010, pp. 499–511; Jocoy, 2004, pp. 19–21; Normann, 2005, pp. 520–542; Lambooy, 2000, pp. 17–37; Oinas, 2000, pp. 57–69).

Innovativeness on the regional basis

A literature query has proven a variety of definitions of innovation. Many of them regard to the definition and typology of innovation proposed by the third edition of the Oslo Manual (OECD, 2006) or its earlier versions. Innovation is understood as "an implementation of a new or significantly improved product (goods or services), or process, a new marketing or organizational method within an economic practice, organization of a workplace or relationships with the environment" (OECD, 2006, pp. 48, 50–54).

Nowadays, regions are also subject to the factors and mechanisms characteristic to economy: acceleration of the innovative process, and a simultaneous cumulative utilization of innovations in creating consecutive innovations (Gorzelak, Smetkowski, 2005, p. 25; Korenik, 2011, p. 79; Markowska, 2010, pp. 13–23).

Researchers understand innovativeness on the regional basis as:

a) the ability of entities in the region to continuously search for and use in economic practice the results of R&D, the development of production technologies and services used, the introduction of new methods and techniques in management, as well as the improvement and development of infrastructure and knowledge resources (Niedzielski, 2008, pp. 150–152);
b) a system of internal conditions and features of a region, enabling its innovative processes to take place (Nowakowska, 2009, pp. 19–41);
c) in subject terms – innovative abilities of individual actors of the regional innovation scene and synergy mechanisms occurring in this system; in process terms – the sum of the component processes that create the innovation process such as the process of learning, adaptation, diffusion or cooperation; the innovation processes are fostered by pro-innovation attitudes: creativity, openness, flexibility or entrepreneurship (Nowakowska, 2009, pp. 19–41).

Malopolskie Voivodship – a region of innovations

Gardiner and Martin (2004, p. 58) describe basic factors for competitiveness, which are crucial for the regions according to the level of their development. And so the characteristics of a learning region, where competitiveness is based on innovation, is based on the size of selected indicators such as the level of GDP per capita PPS, the degree of urbanization, employment level in the service sector and in HRST, sectoral diversity and the quality of life, which should be high. A very broad review of the regional indicators of competitiveness can be found in e.g. the works of Snieška and Bruneckiene (2009, pp. 45–57); Brooksbank and Pickernell (1999, pp. 310–326); Pinelli et al. (1998, pp. 1–15).

Table 2 presents chosen indicators characterizing Malopolskie Voivodship to verify how this region comes out against the other regions in Poland and whether the term "learning region" is legitimate in reference to it. Additionally,

the values of the chosen indicators for Poland as a whole and 28 EU countries were added for comparison. The time range for the analysis is subject to availability of statistical data and includes the years 2007–2012 (in case of data for the GDP, until 2015; in case of data for the HRST, until 2016, in case of data for R&D, until 2014). The position of the Malopolskie Voivodship in the ranking, including all 16 voivodships of Poland, is presented in round brackets.

Table 2. Chosen indicators of competitiveness for Malopolskie Voivodship as a learning region in the years 2007–2016 (against other Polish voivodships and EU member countries)

Indicators	Region	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	2	3	4	5	6	7	8	9	10	11	12
GPD *per capita of* PPS (euro)	Małopolska Region	12,300 (8)	13,000 (6)	13,000 (6)	13,900 (7)	15,100 (7)	15,700 (7)	15,900 (7)	16,600 (7)	17,800 (7)	–
	Poland	13,800	14,500	14,600	15,900	17,000	17,800	17,900	18,600	19,800	–
	UE-28	26,000	26,100	24,500	25,500	26,100	26,600	26,700	27,600	28,900	–
GDP *per capita* in PPS (as % of the EU-28 average)	Małopolska Region	47 (7)	50 (7)	53 (7)	55 (7)	58 (6)	59 (6)	59 (6)	60 (6)	62 (6)	–
	Poland	53	55	60	62	65	67	67	68	69	–
Total R+D expenses *per capita* (GERD') (euro)	Małopolska Region	64.6 (2)	77.7 (2)	64.9 (2)	83.3 (2)	89.2 (2)	118.5 (2)	119.5 (2)	133.3 (2)	–	–
	Poland	46.3	57.6	55.0	68.6	74.5	90.1	90.3	101.6	–	–
	UE-28	460.7	479.6	472.9	490.9	516.7	536.3	543.4	564.4	–	–
Total expenses for R+D as the percentage of GDP	Małopolska Region	0.88 (2)	0.91 (2)	0.88 (2)	1.00 (2)	1.00 (2)	1.31 (2)	1.30 (2)	1.38 (2)	–	–
	Poland	0.56	0.60	0.66	0.72	0.75	0.88	0.87	0.94	–	–
	UE-28	1.77	1.84	1.93	1.93	1.97	2.01	2.03	2.04	–	–
Total number of the employed at HRST (th.)	Małopolska Region	485.0 (4)	505.8 (3)	524.5 (3)	533.6 (3)	568.8 (3)	616.4 (3)	639.3 (3)	647.7 (3)	635.4 (3)	724.4 (3)
	Poland	5,971.5	6,211.9	6,584.7	6,770.0	6,961.3	7,241.5	7,506.4	7,830.6	8,039.5	8,170.2
	UE-28	100,019	103,472	105,784	107,466	111,362	114,850	117,401	120,352	123,025	125,877
Number of the employed at the HRST as a proportion of the professionally active population	Małopolska Region	30.3 (6)	31.3 (6)	32.4 (6)	32.8 (6)	34.1 (5)	36.0 (5)	36.8 (5)	37.9 (5)	40.1 (5)	42.0 (5)
	Poland	30.8	31.9	33.3	34.3	34.9	36.0	37.3	38.8	40.1	41.1
	UE-28	36.8	37.4	38.0	38.7	40.1	40.9	41.7	42.5	43.3	44.1
Total number of the employed at the HRST *core* (th.)	Małopolska Region	203.1 (3)	222.3 (3)	236.5 (3)	228.6 (3)	254.7 (3)	281.0 (3)	285.4 (3)	291.3 (3)	299.3 (3)	340.3 (3)
	Poland	2,428.7	2,567.6	2,814.7	2,887.2	2,961.7	3,126.7	3,247.8	3,463.9	3,617.3	3,640.5
	UE-28	37,536.5	39,089.5	40,269.0	41,007.9	44,213.3	45,319.5	46,517.4	47,487.6	48,988.0	50,584.6
Number of the employed at the HRST *core* as a proportion of the professionally active population	Małopolska Region	14.6 (7)	15.8 (4)	16.8 (4)	16.6 (5)	18.0 (3)	19.5 (3)	19.4 (4)	20.1 (4)	21.9 (4)	23.0 (2)
	Poland	14.4	15.1	16.3	16.9	17.2	18.1	18.7	19.9	20.8	21.1
	UE-28	15.8	16.3	16.7	17.1	18.5	18.8	19.2	19.6	20.1	20.7
Number of researchers and engineers employed at the HRST (th.)	Małopolska Region	73.8 (3)	78.4 (3)	79.7 (3)	73.0 (4)	88.8 (3)	105.2 (3)	100.7 (3)	101.3 (3)	100.6 (3)	111.4 (3)
	Poland	829.8	848.1	902.7	910.0	991.9	1,059.4	1,084.1	1,130.7	1,140.9	1,145.7
	UE-28	11,238	11,624	11,784	11,956	15,376	15,534	15,865	16,124	16,568	17,182

1	2	3	4	5	6	7	8	9	10	11	12
Number of researchers and engineers employed at the HRST as a proportion of the professionally active population	Małopolska Region	5.3 (4)	5.6 (3)	5.7 (3)	5.3 (5)	6.3 (4)	7.3 (3)	6.8 (5)	7.0 (4)	7.4 (2)	7.5 (3)
	Poland	4.9	5.0	5.2	5.3	5.8	6.1	6.3	6.5	6.6	6.7
	UE-28	4.7	4.8	4.9	5.0	6.4	6.4	6.6	6.6	6.8	7.0
Total number of patented registrations per million inhabitants	City of Kraków	16.714	19.363	38.549	29.198	53.374	50.059	–	–	–	–
	Małopolska Region	7.957 (2)	9.866 (2)	14.697 (2)	15.061 (3)	23.728 (1)	18.498 (3)	–	–	–	–
	Poland	5.299	6.121	7.559	9.477	10.081	11.222	–	–	–	–
Number of high-tech type patent registrations per million inhabitants	City of Kraków	1.428	3.741	3.313	3.68	2.31	7.332	–	–	–	–
	Małopolska Region	0.33 (10)	1.372 (5)	1.065 (7)	0.939 (6)	0.638 (9)	1.665 (5)	–	–	–	–
	Poland	1.014	0.857	1.098	1.693	1.574	1.489	–	–	–	–

* GERD – Gross Domestic Expenditure on R&D.

Source: own study based on Eurostat.

As it was shown in Table 2, the Malopolskie Voivodship is becoming more and more competitive, even though comparative statistics demonstrate that it is below the national average and it is quite far from EU standards. Its GDP per capita in the considered period increased notably.

The indicators that make it possible to better illustrate the knowledge production process in the region's economy than by means of GDP are, above all, those regarding R&D and employment in the technology and knowledge-based sectors. It is expenditure on research and development (GERD) that is one of the most commonly used measures, which approximates innovative attitudes and involvement in the creation of knowledge of regions and countries. Observing the results presented in Table 2, it can be noticed that the Malopolskie Voivodship ranks second on the national scale, giving way only to the Mazowieckie Voivodship.

Human resources are one of the pillars of the development of a knowledge-based economy. It is responsible for its formation and circulation. For statistical purposes, the most often used index is the HRST, describing human resources in science and technology, i.e. graduates and/or employed in scientific and technological professions, which determine the number of employees actively participating in research and creation of technological innovations. As demonstrated by the results in Table 2, the number of employees in this sector in the Małopolskie Voivodship in 2007 exceeded 30% of the professionally active population and is showing a growing trend. In 2016, it reached 42%, ranking 5th in the country and exceeding the national average. The heart of the HRST group is the 'HRST core'. The HRST core is persons meeting both of the above mentioned criteria: having a higher education degree and employed in scientific and technological positions considered to be accelerator of the development of technological innovations. As it can be concluded from the data in Table 2, the number of such persons in Malopolskie Voivodship in 2007 comprised 14.6% of the professionally active population. This earned the considered region the 7th position in the ranking. In subsequent years, this percentage gradually increased, giving Małopolska the 2nd place in the region in 2016 (just behind Mazowieckie Voivodship) and was as high as 23%, thus surpassing both the national and EU average. In the analyzed period, Malopolskie Voivodship can also pride in a clearly growing number of employed scientists and engineers. In 2016, the percentage of their employment among the professionally active population

was at 7.5%, placing the region on the 3rd position (after Mazowieckie and Dolnośląskie Voivodships) and thus ahead of the national and the EU average.

Another important indicator for assessing the level of development of a knowledge-based economy in a given region is the number of patent applications filed with the European Patent Office (EPO) per one million inhabitants. In general, it can be said that this is an indicator of generation capacity, but also the absorption of knowledge by regional economies represented by companies operating there. Patent statistics are used to assess the innovative activity of a country or region, and thus its competitiveness. The patents themselves are a way of protecting the results of R&D works and at the same time a reliable resource of information about the already implemented ideas. As shown in the data in Table 2, the number of both general and high-tech type patent applications in Malopolskie Voivodship, calculated per million inhabitants was gradually increasing since 2007, then decreased in 2011, and increased again in 2012. According to data, compared to 2007, there was an increase in the number of patent applications in total by almost 133% in 2012, while in the case of high-tech patents, by as much as 405%.

Conclusions

In the light of the concept of a learning region, the analysis of the situation of the Malopolskie Voivodship based on data in Table 2 allows a conclusion that the term is legitimate with regard to the studied region. At the same time, it is necessary to take into consideration that it is the capital city of the region, Kraków, that is the main contributor, as the infrastructure supporting knowledge and innovativeness is concentrated mainly within the borders of the Kraków Metropolitan Area.

Maintaining this trend is supported by the activities of local government administration for stimulating innovation in the Małopolska region, undertaken since 2013. On the one hand, these activities were dedicated to the academic environment, which is largely focused in the capital of the region. It should be emphasized, though, that the beneficiaries of the activities are enterprises from the entire Małopolskie Voivodship. It is presumed that Malopolskie Voivodship will retain its learning region status in the future.

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ETHICAL CODES AND THEIR IMPORTANCE IN THE MODERN MANAGEMENT PROCESSES

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ABSTRACT The modern ethical considerations are becoming an increasingly important topic in society and economy. The creation of an ethical image of a company may result in benefits, improve management, and eliminate conflict situations. The presented tools of effective management are only a part of those offered by employing ethical codes in business. Therefore, it seems reasonable to combine tangible and intangible-ethical gains in order to achieve economic benefits.

Introduction

The ethical aspect of economic life has been known to people since the first time they decided to exchange and offer their goods to other people. Moral standards apply to contemporary managers, entrepreneurs and sellers in the same way as they once applied to traders or bankers. This could be proved by numerous examples of trade corporations and craft guilds created as early as in the ancient time and the Middle Ages, which required from their

members to be honest, reliable, and hard working. The aim was to not only shape the appropriate moral stance of a person, but also multiple profit by displaying such attitude. This was either because such conduct made it possible for affiliated producers and traders to distinguish themselves from unreliable traders and ordinary frauds. This ancient demeanour, which is represented in, among others, mercantile ethos, remains valid in today's economic realities. However, it should be added that the equivalent of a merchant of that time, i.e., today's entrepreneur, must perform disproportionately more moral duties than his precursor (Hartman, Woleński, 2009, p. 316). This is due to economic evolution and emphasis on creating a democratic society in which individuals are equal. Therefore, a modern representative of, e.g., a bank, should not only be honest and reliable, but also possess other features, e.g. express the same level of respect for all customers, regardless of their wealth, origin or social status.

Characteristics of ethics, business ethics, management

The explanation of the concept of ethics should be preceded by the discussion on morality, as although these two words are often used interchangeably, they do not bear the same mining. The word morality derives from Latin *mores*, which in literal translation means custom, tradition or a body of standards or principles that should be followed by a person. Whereas, ethics, which is freely translated in the same way (the word ethics derives from the Greek word *ethicos*), is "a science dealing with philosophical and religious reflections, which are aimed at answering questions about the character and nature of values referred to as Good and Evil" as stated by B. Pogonowska (2004, pp. 38–39). The above-stated definition includes element defined as spiritual reflection, which is of particular importance. This is because religion is considered one of the most important determinants of ethics, while religious norms have the strongest influence on understanding of good or evil by social groups. It should be noted, however, that in this case, atheism is another type of spiritual reflection. To sum up, ethics may be described as the science of morality.

The concept of business ethics is variously defined, and therefore, before presenting its definitions, the author decided that it is worth preceding them with an attempt to define the very concept of business, which may be important for its ethical evaluation. When considering ethical codes, the opinion presented by P. Czarnecki, according to whom "the goal of business is to satisfy the material (and indirectly also spiritual) human needs of both present and future generations" (Czarnecki, 2008, p. 196) seems to be the right approach. This view is supplemented by the assumption that "satisfying material needs, or maximizing profit, should not be the only or the most important criterion of the entrepreneur's activity, as it is not of the highest value", as presented by J.W. Gałkowski (Borkowski, Gałkowski, 2002, p. 42). Therefore, for the purpose of further consideration of the role of ethics and ethical codes, it is assumed in this article that absolute profit maximization does not constitute a priority, even though profit is essential to the functioning of a business. An important condition for business operation must be ethical relationships that should take place between an entrepreneur and an employee, an entrepreneur and a client, an employee and a client, as well as an entrepreneur and state and society (the environment).

This way of characterizing business makes it possible to define business ethics itself, which in the literature is referred to as "the systematic study of ethical matters (beliefs, standards, values, etc.) pertaining to business, industry, banking, and related activities, institutions, or, in general, practices of human behaviour. (Gasparski, 2000, p. 17). The concept of business ethics may also be presented from the perspective of management, i.e., maximization of profits, as portrayed by W. Gasparski: "Business ethics is a discipline practiced at the interface of ethics, understood as a branch of practical philosophy, and managerial activity related mainly to the economy,

trade and other types of business activities" (Gasparski, 2000, p. 16). The characteristics of business ethics is proof of the necessity to revaluate goals of many contemporary entrepreneurs, and understand that the aim of a company should be such profit maximisation that does not violate freedom of other participants involved in management and is in accordance with the view presented by A.N. Whitehead, who said that "Great societies are societies in which business people attach great importance to their deeds and functions." (Gasparski, 2000, pp. 18–19).

Whereas, the economic literature most often presents management as a process that is constantly repeating itself and involves maximizing profits. It should be added that profit maximization does not always involve maximisation of tangible assets, but may also be perceived through building positive relationships with the environment, in particular with clients. This is especially important for today's global, toughly competitive markets. The aspect of management may be also presented in the same way as the one of M. Rekowski, who defined management as making economic choices on what to allocate relatively rare resources available to a person and needs which should be met. Every economic decision is related to two aspects: positive and negative. Whereas, "the positive aspect concerns making decisions on what economic goals will be pursued and what resources will be used to achieve these goals, the negative aspect means the necessity of resigning from other goals to which resources could be allocated" (Rekowski, 2009, p. 14). It is worth noting that from the perspective of business ethics, the decisions making process should not be limited to only an economic but also a social aspect.

The concept and structure of ethical codes

The aim of specialists in business ethics is to raise the ethical awareness of the organization in such a way, as to facilitate the management process, affect the positive image of the company, or eliminate unwanted behaviours. These goals can be achieved by means of tools such as the selection system, the recruitment system, training courses for employees, and the use of ethical codes.

Ethical codes may be defined as a written or oral set of standards of conduct, values, practices and principles that are required to be followed by recipients of codes. The importance of codes is proven by the fact that even in organizational groups that were morally ambiguous, there was a need to create a set of rules, standards of conduct, prohibitions and sanctions. The above relates to pirates, who are considered pioneers of codes (Bugdol, 2007, p. 163). However, their behaviour is not a good example to follow, as the guiding principle of codes is to follow them in order not to hurt or harm others. Nevertheless, this example shows that in a situation where people have to coexist and cooperate, guidelines on how such cooperation should take place are needed.

Codes can be divided into two types:

- general, which are addressed to representatives of a professional group, e.g. the code of medical ethics, the civil servants' ethical code, etc.,
- specific, which regulate the organizational group's activities specialized in a particular field, e.g., the code of ethics for veterinarians, the code of ethics for tax office or city hall.

The structure of most ethical codes consists of the following elements: introduction, formulation of general principles, definition of more detailed rules, description of ways of resolving conflict situations, and determination of sanctions (however not in all codes) imposed on a person or group of people who do not comply with the rules contained in ethical code.

Furthermore, ethical codes should shape employees' attitude based on five pillars of ethical behaviour, which include responsibility for themselves and others, commitment, professionalism, teamwork and respect (Vissak,

Vadi, 2013, p. 114). Such ethical codes have a chance to succeed in economic space, and bring the enterprise broadly understood profit maximization in economic and social sense.

The role of ethical codes in the contemporary economic realities

Are ethical codes truly needed in economic realities, if there exist law codes? This is a question the supporters of the existence of ethics in the economic environment are frequently asked. The truth is that law norms, i.e., the commercial and employment codes, regulate many aspects of economic life. Furthermore, it is also true that nowadays it is not possible to operate freely (manage) only in environments regulated by strict standards of conduct, which are defined as the codes of law. Therefore, the opening question may be answered with a different one, i.e., are all behaviours, according to the law, acceptable, moral behaviours? The answer is negative, and therefore the law should be supported with soft standards, called ethical standards. This is because any law cannot regulate all aspects of economic life, as by nature it has to be universal and thus simple. Each branch of the economy or sector has its own specific features, which is why it requires establishing its own additional rules of proper conduct. Moreover, the rules of conduct vary depending on social environment or place (an act that is acceptable in Europe, may not be seen in that way in, for example, Africa). A law whose task is to regulate all these aspects would become complicated, unclear and too extensive to apply. Therefore, apart from the law, the application of principles of professional ethics as a complement to management process seems to be the right choice. (Mączyńska, Sójka, 2017, pp. 141–143). The goals of the law and ethical codes coincide and concern eliminating pathological behaviours in the form of crimes or financial frauds[1]. As proof, it is important to underline that financial fraud is defined in the literature on the subject as not only punishable, but also unethical or unacceptable act in the economic sphere. To quote Z. Monkiewicz and Z. Nizińska: "financial frauds (in a broad sense) are punishable acts that affect and threaten universal goods in the sphere of economic life, violate trust related to the position of the perpetrator or institution of economic life, and attribute to a loss in public trust in the economic system or its basic institutions." (Monkiewicz, Nizińska, 2013, p. 1). The problem of financial frauds and irregularities in the management process concerns almost every other company, especially those operating in the field of service activities. The reason for this state of affairs may be the intangible nature of services, where it is easy to disobey the principles of proper conduct, and, at the same time, more difficult to prove such behaviour. Therefore, the role of ethical codes seems especially important here. The development and application of an appropriate set of standards of conduct in a complementary manner will complement the law codes and allow offering services of a satisfactory standard.

The problem of malpractice and financial frauds also concerns Poland. The research conducted by PwC consulting company in 2018 showed that 50% of companies and organizations were subject to economic pathologies. The largest percentage of all crimes concerns asset misappropriation – as much as 46%, with the following being: unethical ways of conducting business and conflict of interest (43%), transactional and tax frauds (40%), cybercrime (33%) and bribery and corruption (17%) (PWC, 2018).

Polish entrepreneurs estimate that financial loss incurred as a result of malpractice and financial frauds significantly concerns as many as 43% of them, with the sums ranging from PLN 400 thousand to PLN 20 million.

[1] Pathological behaviour in management processes is defined as economic pathology. The word pathology derives from the Greek language and is a combination of two other words: *phatos* (suffering), *logos* (science). Originally, the word pathology was used in medicine. Nowadays, economic pathologies are defined as destructive and self-destructive behaviors of people, social groups or whole societies functioning in the economic environment.

Unfortunately, these are not the only costs incurred as a result of the occurrence of economic pathologies. According to the research, as many as 58% of entrepreneurs indicated the negative influence of malpractice and financial frauds on employee morale, 51% experienced noticeable deterioration of business relations with the environment, and 48% of the entrepreneurs had their company's reputation, that is, the strength of the company's brand, negatively affected (PWC, 2018).

Thanks to the creation of ethical codes, the scale of the pathological behaviours presented above can be can significantly reduced in business ethics. The advantages of using ethical codes include, among others:

- impacting the prestige of the organization,
- helping solving interpersonal conflicts on many levels,
- hastening the decision-making process,
- defining and justifying the limits of deviations from legal norms,
- impacting the development of local communities and the natural environment,
- impacting cooperation with contractors,
- ethical codes may be treated as an effective way of completing internal and external control of employees, e.g. in public administration (Gasparski, Jabłońska-Bonca, 2009, p. 223).

All these advantages have a direct impact on the management process, that is, making decisions about maximizing profits in the enterprise. Since ethical codes affect the image of the company and facilitate management, they can be included in the assets of the organization (Gasparski, 2000, p. 192). Furthermore, introduction of ethical codes is an essential element of creation and raising organizational culture, which is defined as "a set of dominant values and standards of conduct, characteristic for a given organization, that are supported by assumptions about the nature of reality, manifested through artefacts – external artificial constructs of a given culture ... which are norms and values of a given organization" (Siwek, 2000, p. 365). The presented concept of organizational culture shows what types of relations ethical codes may be based on, i.e., interpersonal relations, the nature of the organization itself, the nature of the environment, and the relationship of the organization with this environment.

The above-presented premises and research results clearly indicate that codes can be used in modern management, and that they are also an indispensable supplement to the codes of economic law, which can reduce the scale of economic pathologies in Poland and in the world.

Conclusions

The role of codes is to show directions to the participants of economic processes, in such way so that they can find in them clear indications as to the correct behaviour in relation to individual sectors and industry branches. Paradoxically, the most important advantage of using ethical codes in enterprises, that is, indicating the right course of action, carries a certain risk. This is due to the fact that ethical codes should not be treated as universal standards, but only complementation to general ethics. Moreover, people who follow the principles included in codes, often erroneously believe that in order to act properly, one needs to be ethical in accordance with the code. A perfect example of this may be a situation when a police officer, who acts professionally only during working hours, is a witness to crime. The officer may assume that he has the right to react only when on duty, as after it he is discharged from this obligation (the code may not specify the scope of responsibilities off the duty). Meanwhile, one is a professional 24 hours a day, and so there are many examples of police officers "in civilian clothes" who reacted to violence and crime.

It is worth noting that although the need to apply ethics in the form of codes seems to be indispensable in the management process, their application is not easy, if only due to the existence of high pressure not to do so. If the recipients of the codes are to follow them, they should be created on the basis of the five principles of ethical power. This is the concept of the five elements that were described in the book by K. Blanchard and N.V. Peal and which include: purpose, pride, patience, persistence and perspective (Blanchard, Peale, 2010, p. 47). The application of the principle of five elements of ethical behaviour allows creation of permanent rules of proper conduct and helps applying them, especially in crisis situations. The ethical codes of modern enterprises remind of and defend the goal to increase the long-term value of economic entities, because, as K. Jajuga wrote: "short-termism destroys the market system" (Jajuga, 2017, p. 25). Ethical codes are becoming increasingly more important nowadays. Strongly competitive markets require internal regulations in the field of management, especially in large corporate entities.

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EVALUATION OF THE NATIONAL COHESION STRATEGY. WHAT CAN WE LEARN FROM EVALUATION RECOMMENDATIONS?

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Abstract

Evaluation systems are important parts of public policy information feedback loop mechanisms. Evaluation studies gather a bulk of knowledge that may be used in improving public interventions. Recommendations formulated on the basis of evaluation studies play an important, but often neglected role in policy advice. As such, the quality of recommendations and mechanisms of their implementation become essential challenges for the evaluation system designers, evaluators, administrators and policy makers. The goal of the paper is to discover the key deficiencies of programs conducted within the National Cohesion Strategy (NCS) in Poland. The paper presents results of the study of 664 recommendations included in 56 evaluation studies. The study revealed a considerable inconsistency between the identified problems (mostly referred to deficiencies in program design) and proposed interventions that emphasized the changes in program management. The study also indicated that some evaluators had a little interest in future fate of the interventions, developing their recommendations not attaching enough importance to specifity of recommendations and their future implementation.

Introduction

Evaluation of public interventions is a growing challenge for modern states. Public interventions are multidimensional, and must be undertaken in a complex social, organizational and institutional setting. Many scholars note that evaluation fosters the improvement of governmental public interventions. It is through the existence of evaluation mechanisms that one can speak about the rationalization of public decisions (Alkin, 2004;

Kaufmann, Kraay, Mastruzzi, 2009; OECD, 2013). Evaluation is also a prerequisite for systemic learning, as it is a basic mechanism for understanding logic and consequences of public interventions. Here, systemic learning in public domain means the process through which public institutions utilize the existing knowledge to improve functioning of institutions themselves and ameliorate social and economic problems.

One of the key prerequisites of systemic learning is a properly designed and guided evaluation system. The main difficulty, however, is the use of evaluation results in a multilevel and dispersed public evaluation system. A multilevel and dispersed public evaluation system is the one in which there are many actors responsible for evaluating public interventions situated at different levels of state organization. In many cases, these units are embedded in a multi-level network of evaluation organizations and institutions. One of the key question in such a system is how to facilitate a flow of expertise gathered in a bulk of evaluation studies and what should be the relations between managing authority and evaluators. Despite an undoubted advantages of designing, implementing and evaluating public interventions (mostly at the regional or local level) there is also a risk of fragmentation of existing expertise, and of limitation of the scope of evaluation use.

On the other hand, if knowledge contained in evaluation studies is to be useful, it should not only be appropriately processed during the decision-making process. It also should have appropriate characteristics that facilitate its use, even if there are important premises, such as political or substantive, that limit the evaluation use (Fleischer, Christie, 2009; Preskill, Caracelli, 1997).

According to Owen, who synthesized numerous studies on drivers of evaluation use, there are two crucial sets of factors facilitating evaluation use: 1) characteristics of the settings (where evaluation is planned and conducted), and 2) characteristics of the evaluation itself (Owen, 2007). It should be noted that there is no consensus whether there should be universal standards of evaluation or whether the evaluation studies should be adapted e.g. to the type of evaluation users or the country in which the evaluation is carried out (Bacmann et al., 2000; Segone, 2009). There seems to be a widespread agreement among scholars and practitioners though that a sound evaluation study should contain recommendations that are justified by evaluation study conclusions and lead to proposed course of actions.

At the same time, a brief review of manuals and guidance developed by international and national organizations illustrates the core characteristics that can be used as criteria of a solid recommendation.

"Recommendations are individual statements derived from the evidence that prescribe who should do what in the future. They provide suggestions for introducing improvements and/or identify matters for follow–up. Evaluators should explain the basis for making the recommendations, with linkages to the information collected in the evaluation. Both the interpretation of evidence and the basis for judgment should be addressed" (Canadian International Development Agency, 2002, p. 8).

The United Nations Evaluation Group, on the basis of a review of international practices, advises that the structure of recommendations should be: 1) limited in number (no more than 10); 2) prioritized and sequenced; 3) internally consistent and take into account interdependencies; 4) be aligned within groups (*Improved Quality of Evaluation Recommendations Checklist*, 2018, pp. 4–5).

Therefore, our study focused on two questions: 1) what problems were identified in the evaluation recommendations and what ameliorative actions or instruments were proposed in the recommendations, 2) to what extent the recommendations included in evaluation reports under scrutiny meet the above-mentioned standards of a solid recommendation.

The latter question focused on three important recommendation features: a) the general specifity and clearness of recommendations, b) the specifity regarding recommendation users, and c) the timeframe for recommendations implementation.

Aim and method of the study

The main aim of the study was to explore characteristics of the recommendations included in the evaluation studies commissioned within National Cohesion Strategy in the period of 2011–2015. This was primarily due to the fact that these evaluation studies constitute the bulk of evaluations of public programs in Poland (National Evaluation Unit, 2008; Rokicki, 2011). The analysis was based on the database of evaluation reports developed by the National Evaluation Unit in Polish Ministry of Development (National Evaluation Unit, 2015).

There were four overarching premises of the study. The first was that analysis of numerous recommendations may provide knowledge on the existing problems that appear in policy design and implementation, as well as knowledge on the proposed actions or instruments that should be applied to improve interventions undertaken within the cohesion strategy. The second was that the more clear and specific the recommendations, the better information it provides to the user. The third was that the recommendations should indicate the time of their implementation, providing information on existing bottlenecks in policy process. The fourth was that the recommendations should indicate specific users that are responsible for its implementation, allowing to identify key actors and stakeholders. Hence, we asked the five following research questions:

1. Problems. What problems and deficiencies were identified in the evaluation recommendations?
2. Solutions. What solutions (actions and instruments) were proposed to solve or ameliorate the identified problems?
3. Specifity: How specific and clear were the recommendations?
4. Timeframe for implementation: When, according to evaluators, the recommendation should be implemented?
5. Users of recommendation: Who should take action in order to implement recommendations?

Our analysis covered 221 evaluation reports (out of 1129 reports included in the NEU database) that were selected according to the following criteria:

1. Contracting authority (the authority that contracted the evaluation). Only the reports commissioned by central state and local-government administration were included.
2. Evaluation study size. The NEU database distinguishes 3 type of evaluation studies: “small”, “medium”, and “big”. Only “big” and “medium” evaluation studies were selected.
3. Strategic thematic area. Evaluation studies conducted in the following areas: human resources development, regional and territorial development and good governance were selected.
4. Evaluation type. Ex-ante, on-going, and ex-post evaluations were selected.

Of 221 reports that met the above criteria, we randomly selected 56 reports that were examined in the study. All the studied reports included 664 recommendations. All the recommendations were subject of the content analysis. The coding scheme was based on conventional analysis, where coding categories were derived from the text data, as well on a directed approach, where coding categories referred to public policy theoretical models.

The vast majority of evaluations studies were commissioned by local-government administration (80% of all the analyzed reports). Only 20% of the reports was ordered by the state administration.

Presentation of results

Identified problems and recommended actions

The study showed that the key problem to which recommendations referred were deficiencies and mistakes in program design (Table 1). Such problems were indicated in 38% of all recommendations. Within this category, approximately, half of problems regarded program design and put emphasis on inadequate or ineffective instruments (excluding financial instruments). 14% of recommendations paid attention to problems with program management, focusing on inefficient use of resources (organizational, human and financial), and problems with monitoring and evaluating of programs. Problems with selection and recruitment (11%) pointed at the bottlenecks in recruitment of beneficiaries, deficiencies in competition rules, and assessment of applications. The least frequent category stressed problems with external communication (9%) with programs target groups and the society. The remaining problems were indicated less frequently (11% of all recommendations). Almost 13% of all recommendations did not refer to any problem, and 4% affirmed the need for continuation of intervention in an unchanged form.

Table 1. Problems identified in the recommendations

Problems	Number of recommendations	Percentage
Construction of the program and mistakes in the program design	250	38
Deficiencies in program management	93	14
Lack of problems to which the recommendation is linked	87	13
Selection and recruitment to the program	74	11
Other problems	76	11
Communication with target groups, beneficiaries, society at large	57	9
Lack of problems - Affirmation of the existing interventions, or the need for continuation	27	4
Total	664	100

Source: own study.

The need for a redesign of numerous program interventions was hardly reflected in recommendations concerning necessary changes. Only 18% of recommendations proposed different modifications in program design. The bulk of recommendations (38%) emphasized the need for changes in program management, improvements in external communication and modification of financial regulations. It worth noting that substantial part of recommendations (26%), due to their generality, did not propose any specific actions of instruments. The discrepancy between the identified problems and proposed interventions turned out to be the major inconsistency of evaluation recommendations.

Specifity of recommendations

The analysis showed that many recommendations lacked enough specifity which would help in reconstructing the intentions of evaluators (Table 2). 9% of all recommendations were not specific at all, and 31% were classified as rather not specific. The recommendations that were included in the reports contracted out by the state administration were slightly more specific (64%) than recommendations of reports contracted by local, or regional administration (58%).

Table 2. Specifity of recommendations according to contracting authority

	State administration		Local-government administration		Total	
Specifity	no.	%	no.	%	no.	%
Specific recommendation	24	25	137	24	161	24
Rather specific recommendation	37	39	195	34	232	35
Rather not specific recommendation	22	23	187	33	209	31
Not specific recommendation	12	13	50	9	62	9
Total	95	100	569	100	664	100

Source: own study.

The fact that nearly half of the recommendations contained only general tips recommendations which are difficult to translate into specific actions, suggest that for a large part of evaluators development of recommendations is an activity of secondary importance.

Timeframe for implementing recommendations

The study showed that nearly half of the recommendations (48%) indicated a specific time for their implementation (usually a specific year or period in a given year – quarter, half year). Almost one third of the recommendations (29%) proposed a very general timeframe (e.g. future programming period, next EU perspective, etc.). Such recommendation appeared more frequent in evaluations contracted by the local-government administration (30%) than by evaluation contracted by the state administrations (21%). The study also revealed that 20% of all recommendations did not specify any period of the implementation. This seems to confirm the thesis that a substantial part of evaluators does not attach great importance to implementation of the proposed changes, leaving decisions on this matter to the contracting institutions.

Users of recommendations

Majority of the recommendations (85%) identified the users of recommendations. Only in case of 15% of recommendations there were no identified actors who should be responsible for their implementation.

The study revealed that the bulk of recommendations was addressed to institutions responsible for management of the evaluated interventions. It was both the case for state and local-government administration. More than 70% of all recommendations included in the reports commissioned by state administration were addressed to institutions of the state administration (39% of recommendations addressed to managing institutions and nearly 33% at other users at state level). In case of reports that were commissioned by the local-government administration, 78% of recommendations were addressed to users at the same level.

It is worth noting that the vast majority of recommendations indicated only one user. Only 16% of recommendations indicated more than one institution that should be responsible for implementation. Given the many stakeholders involved in implementing the cohesion strategy, it is difficult to explain why most of the recommendations neglected the role of other actors.

Conclusions

Analysis of the identified problems showed that development of policy instruments was a key deficiency in the implementation of the National Cohesion Strategy. It is worth noting however, that the need for a redesign of program interventions was hardly reflected in recommendations concerning necessary changes. The finding that 38% recommendations referred to deficiencies and mistakes in program design and only 18% of recommendations proposed different modifications in program design, showed a significant discrepancy between the diagnosed problems and the proposed interventions.

The study indicates that some evaluators had little interest in the future fate of the interventions. Development of recommendations seemed to be considered as a kind of routine activity. 13% of recommendations did not indicate any specific problem, and 20% of all recommendations did not propose any specific actions.

The study revealed that, firstly, the recommendations lacked specifity and clearness to a significant extent. Secondly, more than 70% of recommendations, regardless of the authority level commissioning the evaluation studies, aimed at users situated at the same level. Thirdly, nearly half of the recommendations were pointing to the specific moment in the calendar. These features seem to undermine the potential for coordination of evaluation studies in Poland, understood as a multilevel dispersed evaluation system. It is thus the reason to reflect on the future activities which would help such a system work in a more coordinated way.

The in-depth interpretation of the above findings requires not only the further studies on the recommendation content, but also a better understanding of relationships between the evaluators and the users of evaluation. In that sense, evaluation recommendations should be analysed not only according to the formal criteria of solid recommendation (like specifity or time frame) or in terms of accumulated knowledge on intervention programs, but also as an output of existing relations between evaluators and evaluation users. In that sense, studies on evaluation recommendations may link characteristics of evaluations with their institutional settings.

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EXAMPLES OF DEVELOPMENT OF ELECTROMOBILITY IN PUBLIC TRANSPORT IN POLAND

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ABSTRACT The development of electromobility is one of the dominant trends in modern transport. The usage of electric vehicles can be noticed both in the case of passenger cars as well as public transport. The article presents the basic legal acts regarding this issue and strategies that assume the development of the use of electric vehicles in public transport in Poland. Also selected Polish cities have been analysed, in which the concept of replacing the rolling stock with a modern and ecological ones, which can include electric buses, is implemented.

Introduction

Nowadays, almost whole Europe faces the challenge of changes in the natural environment, including climate, air and noise. The policies of European and national authorities impose more stringent norms on environmental protection, while local and regional authorities remain in their implementation. Transport is one of the sectors that

contributes the most to the above problems, and at the same time is a basic element of efficiently and effectively functioning cities.

Electric vehicles and broadly understood electromobility enable taking action in the fight against the negative effects of using vehicles with conventional propulsion (having mainly internal combustion engines) without limiting the important role that vehicles- passenger cars as well as public transport vehicles fulfil.

One of the main barriers to the growth of electromobility is the fact that no correct business models have yet been developed, thanks to which it is possible to assess to what extent new projects in this area will guarantee a source of revenues and funds allocated for the projects will be secured. Currently, electric vehicles have higher initial investment costs compared to traditional vehicles and require proper adaptation of the infrastructure (mainly point-based) used for charging. In this respect, numerous initiatives are taken into account that involve the involvement of producers, service providers, information and communication technology (ICT) enterprises, research centres and other entities aimed at creating innovative models for electromobility solutions (EVUE, 2013).

Creating principles of electromobility in Poland's transport policy

The origins of issues related to the development of electromobility in public transport in Poland should be sought in the National Municipal Policy (Krajowa Polityka Miejska, 2015), which indicates the adoption of actions affecting the use of more environmentally friendly vehicles and the promotion of the use of electric cars (Krajowa Polityka Miejska, 2015). Attention was drawn to the fact that city authorities should create trends by introducing into service public transport of rolling stock equipped with ecological propulsion units or using ecological power methods.

Another important document related to public transport issues is the Act on public transport (Ustawa o publicznym transporcie zbiorowym, 2010). It contains an interpretation of the sustainable development of public transport, which takes into account modern and also promoting environmentally friendly modes of transport, but yet no reference is made directly to the use of electric vehicles (Ustawa, 2010).

Work on the development of electromobility in Poland has gained momentum in 2016. In July 2016, the Strategy for Responsible Development (Strategia na rzecz Odpowiedzialnego Rozwoju – SOR) was published, which is to set the path of Polish development until 2020, where priority issues regarding public transport were also included. The project places a strong emphasis on electromobility as well as on the development of integrated public transport in cities using low-emission vehicles.

The main aim of the SOR is to "create conditions for the growth of incomes of Polish citizens with simultaneous increase in cohesion in the social, economic, environmental and territorial dimension". As part of the implementation of the main aim, three specific aims were included (*Strategia*, 2017, pp. 51–55):

1. Specific aim 1 – Sustainable economic growth based more on knowledge, data and organizational excellence.
2. Specific aim 2 – Socially sensitive and territorially balanced development.
3. Specific aim 3 – An effective country and institutions for growth and social and economic inclusion.

The first specific aim concerns, to a large extent, the issues of electromobility, including reindustrialisation (this area concerns the sector of producing transport means). Detailed objectives include programs, and these-flagship projects. Electromobility is one of the programs, it concerns the development of products in the field

of electromobility and market stimulation in such a way as to increase the share of electric vehicles. The program includes two flagship projects (*Strategia*, 2017)

a) e-bus –stimulating the design and production of Polish electric vehicles for the needs of public transport and building strong entities at all stages of the value chain in the urban transport fleet production sector (electric buses and trams). The implementation of the program assumes that by 2025 (12):
   – the Polish electric bus market will be created with a value of at least 2.5 billion PLN annually, gives approx. 1,000 electric buses,
   – a Polish Electric Bus market will be created, whose key elements will be produced inside the country,
   – new technologies and business models related to urban electric buses and charging infrastructure will be developed;
b) electric car – for stimulating the development of technology, production and the market for electric cars. It mainly concerns the production of small city cars and activities related to the introduction of many facilities for electric car owners (mainly in the area of taxes and prices) (12).

Another project is Luxtorpeda 2.0, which is designed to stimulate the development of technology, the production of Polish rail vehicles, with particular emphasis on passenger transport vehicles.

In its final version, SOR assumes public support, which aims at the development of integrated public transport systems using low-emission means of transport, mainly rail vehicles and electric buses. Actions aimed at increasing the importance of rail in the cities (agglomeration railways), which should be integrated with public transport (mainly in the area of tariffs and a joint ticket), were also indicated. The SOR assumes a gradual exchange of the public transport fleet for low-emission vehicles by 2025, which also involves the need to build low-emission charging systems and networks.

Other activities related to the development of electromobility included in SOR relate to the Non-Waste Public Transport program, which was initiated at the beginning of 2017 at the Ministry of Science and Higher Education. The goal of the program is to implement innovative solutions for electromobility as part of an innovative partnership. It is one of the elements of activities within the SOR. The assumptions of the program are based on the role of the state as an intelligent contracting party, cooperation with local governments and creating innovative products. Such consortia, in which both scientific institutions and private sector producers can be found, can count up to 100 million PLN for project implementation and, at a later stage, for a sales market to be created by local governments. It is also estimated that transactions carried out under the program will reach up to 1 billion PLN, and up to 50 local governments may receive even 1,000 modern vehicles (the first purchases scheduled for 2019) (*Jaworzno będzie…*, 2016).

The cost of purchasing electric vehicles in Poland

Until now, Polish cities and municipalities mainly tested electric buses. Currently, they are slowly starting to buy and create lines on which only clean vehicles will operate. However, there are still many problems associated with the purchase and operation of this type of vehicles, which are (Krupa, Kamiński, 2017, p. 3):

– long decision-making paths and numerous procedures that involve the construction of infrastructure, including a complex system of building permits and other related charging systems,
– the problem of the division of competences between entities such as transport companies, the city and electricity distribution companies,

– costs of purchasing electric vehicles,
– strong competition from Chinese bus companies that offer their vehicles at very low prices,
– construction of an appropriate charging infrastructure.

In Poland, about 1,000 city buses are exchanged every year, which may create chances to create demand for new electric buses. An example of these actions is: Miejskie Zakłady Autobusowe in Warsaw and Miejski Zakład Komunikacji in Zielona Góra, which plan, in total, the purchase of around 200 electric buses (Krupa, Kamiński, 2017, p. 5). The average market price of an electric bus is around 2 million PLN. It can be also assumed that the price of an electric bus is from 75 to 180% higher.[1] Therefore, many cities decide to purchase electric buses and apply for their financing.

Despite the high costs of purchasing an electric bus, many cities decide to do so, since assuming that the electric bus will travel for 300 km, the investment in their purchase can pay back after 10 years, as is the case with buses with a diesel engine (Stawski, Ziaja, 2016, p. 4). This task is to be facilitated by pantograph loaders, which are arranged on loops and stops (Table 1).

Table 1. Examples of electric bus prices and operating costs

Type of a bus	Price	Operating costs
BYD (Build Your Dreams)	Approx. 1.6 billion PLN	The cost of covering 100 km for a battery-powered bus is about 50 PLN, whereas traditional combustion cars consume about 40 litres of fuel at the same distance, which costs over 200 PLN. Assuming that the bus covers about 300 km a day, the savings may reach up to 160,000 PLN a year
Solaris Urbino 12 Electric	Approx. 2.2 billion PLN	The Solaris Urbino 12 Electric consumes about 1.35 kWh of energy. A journey of 100 kilometres costs four times less than in the case of the classic Solaris Urbino 12 (which consumes about 40 litres of diesel per 100 kilometres)

Source: own elaboration based on: Krupa, Kamiński (2017); Elektromobilność w Polsce… (2017).

Currently, buses on one charge can travel about 120 km, while a larger range requires larger batteries (solution proposed by BYD), but this has an influence on the vehicle capacity resulting from the need to place a larger battery (ZeEUS eBus Report…, 2018).

Examples of implementing solutions in the field of electromobility in public transport in Polish cities

Currently, most Polish cities are plan or implement various solutions in the field of electromobility. There are many reasons for the development of this type of ecological transport. One can mention, among others, such issues as the increasing number of population in cities, which often translates into increased daily mobility of residents deciding to choose a specific means of transport (usually a car or public transport). The authorities' task is to encourage the use of public transport (in accordance with the principles of sustainable transport development), as well as taking action to meet the requirements in the social, ecological and economic area with these modes of transport. City authorities are paying more and more attention to improving the quality of life of residents, hence the creation of ecological and friendly public transport is slowly becoming the norm.

[1] For comparison, bought in 2011 by ZKM Gdańsk Mercedes-Benz cost slightly more than 950,000 PLN per piece. /www.srodowisko.abc.com.pl/czytaj/-/artykul/elektryczny-autobus-drozsza-cena-tansza-eksploatacja (23.03.2018).

In 2015, almost 12,000 public transport buses were used in Poland, of which only 419 were vehicles with an alternative drive (gas or electric) (*Jaworzno w programie*..., 2017). At the end of 2016, electric buses accounted for 0.3% of all buses servicing in public transport in Polish cities, in total, at that time, 21 e-buses were used in 5 Polish cities: Warsaw (10 electric buses), Kraków (5), Inowrocław (2), Jaworzno (2), Łódź (1) and Lublin (1). According to the plans of Polish local governments and governmental forecasts, in five years' time, around 1,000 buses with electric drive will travel along the streets of Polish cities and communes. Examples of the development of electromobility in public transport in Polish cities are presented below.

Warsaw

Warsaw, to the greatest extent from all Polish cities, is involved in the process of replacing buses with electric ones, as well as with other cities, has the largest number of buses.

The largest Warsaw bus carrier is Miejskie Zakłady Autobusowe (MZA) servicing bus lines within the Warsaw agglomeration. The organizer of transport is the Public Transport Authority in Warsaw (ZTM). Testing of electric buses in Warsaw has been implemented since 2012. The first purchases of electric buses in Warsaw was made in 2014, when two manufacturers applied for a tender for the supply of 10 such vehicles: BYD Europe Rotterdam Holland manufacturing buses in China and Polish Solaris. Ultimately, since 2015, 10 electric buses (Solaris) have been running on Warsaw streets, while from November 2014 to December 2016, 9 BYD buses have been tested (ZeEUS eBus Report, 2018). In 2017, they were joined by another 10 buses, the supplier of which was the Ursus A.A., AMZ Kutno and Ursus Bus (Urbanowicz, 2016) consortium.

Warsaw along with nine other cities (including Barcelona, Paris and Oslo) takes part in the ZeEUS project (Zero Emission Urban Bus System), under which it tests various solutions for electric buses.

Warsaw plans for a low-carbon transport fleet assume that by 2020, 130 electric buses will be used, of which 100 will be articulated. However, in order to use the electric buses, it is necessary to place the appropriate point infrastructure in the form of chargers adapted for charging buses. It is expected that such infrastructure should stand in Warsaw by 2020 in the number of 19 devices. In the nearest future, the city authorities plan that the bus routes in Krakowskie Przedmieście and Nowy Świat will be served exclusively by ecological buses.

Silesian conurbation

In the area of the Silesian conurbation, it is worth paying attention to the example of Jaworzno, the only city in this area that owns and develops the concept of using electric buses. In this city, research and development works aimed at testing electric vehicles are carried out very intensively. TAURON Dystrybucja and Przedsiębiorstwo Komunikacji Miejskiej (PKM) in Jaworzno started cooperation in the field of research and development of electric bus charging technology. The companies plan to carry out annual tests of the electric vehicle and charging infrastructure in normal operation. Cooperation between companies will be aimed primarily at carrying out research work in the field of charging infrastructure for urban electric bus systems (*Jaworzno będzie* ..., 2016). In addition, the city' authorities plan to increase the number of ecological vehicles. Currently, among 60 buses that are part of the PKM, one is electric. At the moment, the city applied for co-financing for the purchase of 22 electric buses together with the necessary infrastructure. In October 2016, a contract was signed with Solaris for the supply of 16 electric buses, which were delivered in 2017, as well as in 2016, the tender procedures for the delivery of another six buses

also by Solaris were completed. As a result of the actions taken, every third bus in the PKM fleet will be a completely zero emission vehicle (*Warszawa: Podpisano*…, 2016).

Kraków

This city pays a lot of attention to environmental issues related to the functioning of public transport. One of the actions undertaken in this field is the electrification of the bus fleet. Miejskie Przedsiębiorstwo Komunikacyjne (MPK) in Krakow has a total of 500 buses and for the moment 5 of them are electrobuses. After a two-year period of testing modern buses, it was decided to purchase them. In 2017, another 20 Solaris electric buses appeared on the streets (*MPK w Krakowie*…, 2016). The purchase of these buses was possible thanks to the support of EU funds (Regional Operational Program for the Małopolskie Voivodeship for 2014–2020), which enabled co-financing at the level of 85%. Bus charging is provided both with the use of plug-in technology (located on the depot) as well as pantographs (located at special points supplied from tram traction). Ultimately, MPK in Kraków plans to use about 50 electric buses by 2020.

Lublin

Lublin, a city in which both buses and trolleybuses are operating, began testing electric buses in 2015. At that time, Ursus Ekovolt started being used by Miejskie Przedsiębiorstwo Komunikacyjne (MPK) in Lublin. Considering the ecological dimension of the use of trolleybuses, it should be mentioned that there are 50 such vehicles in the Public Transport Authority (ZTM) in Lublin. ZTM is planning an additional purchase of 67 electrobuses, of which the most certain is the purchase of 32 vehicles, and 35 more in the so-called. "reserve projects" (ZeEUS eBus Report…, 2018).

In mid-2016, the Cracow company EC Engineering prepared an innovative electric bus charging system, which is being tested in Lublin today. The innovation of this idea consists in a significant (tenfold) shortening of the vehicle's charging time based on technological solutions concerning the power collection system. An innovative charging station was installed at MPK Lublin and, in cooperation with Ursus, a new power collection system was installed on the Ursus Ekovolt vehicle used in the city.

Conclusions

Many European cities plan to buy only zero-emission buses in the future. This is mainly due to the reduction of the level of environmental pollution and other benefits of using these vehicles, including emission-free in the place of their use (despite the use of energy from coal-fired power plants, the level of pollution is much lower than in the case of buses with traditional, internal combustion), smooth driving and quiet operation (which is important from the point of view of noise in urban areas). The biggest disadvantage is the mentioned high price, however, cities that had the opportunity to test electric buses point out that the operating costs are much lower and the purchase of such buses is economically justified, as it is compensated by savings resulting from cheaper operation.

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THE CHALLENGES OF FACULTATIVE ACCOUNTING SYSTEM IN THE STATE FORESTS

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ABSTRACT The main objective of the article is to analyse the basic tools of management accounting in the context of their potential use in individual institutional units of the State Forests National Forest Holding. When identifying facilitating and impeding determinants, the author has indicated the possibilities of applying the instruments in question in the State Forests and after the analysis of the mission, strategy, vision, its map, functional tasks as well as organizational structure, he has ultimately defined overarching challenges of the management accounting system in the State Forests National Forest Holding.

Introduction

The rapidly changing environment poses new challenges to the State Forests National Forest Holding (SF NFH) in the scope of performing the fundamental – economic, but also social and protective function of forests. Despite the fact that it holds a statutory monopoly, it has to take into consideration market and social factors and, consequently, to recognize and satisfy multidimensional and often hardly measurable information needs of the

environment. Therefore, the main objective of the article is to present the system of management accounting, the possibilities of its application and, ultimately, the challenges it will face in the State Forests in the context of generating useful information concerning the condition of forests, changing forests' conditions as well as forest management. Moreover, the author adopted the hypothesis that the system of management accounting can facilitate effective realization of sustainable forest management taking into account the present strategy and functional classification of SF NFH tasks.

The following research methods were used while developing the article: induction, deduction and inference. It was also necessary to carry out the detailed analysis of internal reports and other information resources of SF NFH as well as to conduct critical analysis of literature.

The overview of the basic tools of management accounting in the State Forests

The State Forests National Forest Holding (SF NFH) is an organisational unit without legal personality and is not a company within the meaning of Polish law. It has been established to manage specific property (particularly land, real estate and movables) within the scope of conducted forest management. It is characterized by largely developed organisational structure, in which one may distinguish: the Directorate General of the SF, the Regional Directorates of the SF, forest districts and other units without legal personality. Therefore, it should be clearly stated that the State Forests manage different units and at the same time are subject to management.

Management in each organisational unit is conducted through the realization of its basic functions and on the basis of the analysis of legal acts as well as available literature one may conclude that planning and organisation (forest arrangement plan, financial and economic plan) are particularly essential functions in the State Forests. As a result of strong centralisation, the form of top-down management dominates, despite the fact that the basic and statutorily independent organisational unit is a forest district.

The obligatory system of financial accounting is characterised by a range of shortcomings in the scope of generating useful information of managerial character. After all, this system is subject to realise primarily external informative function – for external environment. More about financial accounting in SF NFH in (Szczypa, 2016; Sadowska, 2015). Acquisition of useful management information, that is the one, which determines effective realization of information and decision-making processes depends, however, on the conscious or oftentimes intuitive application of the management accounting tools. Management accounting tools usually perform internal information function, whereas in the case of the SF NFH, the grounds for their application are clearly determined by the factors from both internal and external environment. The specific nature of forests resulting from their functions: productive, protective and social results in the fact that they are considered social commodities and, therefore, information generated by the selected tools of management accounting should be of both internal and external character, similarly as in the company directed at the concept of corporate social responsibility (CSR).

It seems reasonable to synthetically present premises of the application of management accounting tools, which could be effectively applied in the SF NFH that operates under specific conditions (Table 1).

It needs to be stressed that in table 1 the author reviewed the basic tools of management accounting with particular attention paid to information needs of financial, organizational and management character of the SF NFH. It is undoubtedly desirable to carry out further research in the context of determining the hierarchy of the described tools in relation to the mission, vision and strategy adopted by the State Forests as well as the current aspects of the operational character, influencing the financial and economic position.

Table 1. The overview of the selected tools of management accounting to be applied in the State Forests

No.	Management accounting tool	Grounds in favour of the application of the tool in the SF NFH	The nature of the tool for the SF NFH
1.	Variable costs account	Shortcomings of the systematic costs account in the scope of the valuation of timber production and its assortment ('standing timber' and 'logged timber'). The need to base calculation of production costs on the criterion of 'sensitivity' in relation to production	Operational
1a.	Multi-stage and multi-block variable costs account	The need to structuralize the continuously rising fixed costs (indirect) and to determine subsequent values of contribution margins resulting from covering individual stages of these costs as well as estimating reliable viability of timber and its assortments' sales	Operational
2.	Product life-cycle costing	Minimizing the shortcomings of the 'standing timber' method assuming the contractual 100 – year old phase of forest management as well as the need for determining products life-cycles (products, services and projects) of forest management and strategic management of their costs	Strategic
3.	Target costing	The need to consider, within the framework of calculating the costs of wood production and its assortments, the planned profitability (ensuring the implementation of priority 6 of the SF NFH strategy) and, at the same time, the desired satisfaction of the recipients of forestry products	Strategic
4.	Kaizen costing	The need to prepare tools in the case of the potential need for restructuring the selected institutional units within the framework of the SF NFH or for adjusting the finances of the SF NFH to new determinants of external environment (e.g. the need to pay 2% of revenues to the state budget)	Strategic
5.	Time-driven activity-based costing (TD ABC)	The need for a new approach to calculating and presenting the continually rising indirect costs resulting from the production of timber and its assortments as well as increasingly essential non-productive (indirect) functions of forest. The need to communicate this information to the environment in new perspectives (here in processes)	Operational
6.	Quality costs calculation	The need for quality cost management within the framework of the SF NFH. Focusing on the costs of internal quality assurance within the framework of the implemented silviculture in accordance with the principle 1-10-100	Operational
7.	Budgeting	The need for the conscious finance management of individual institutional units within the framework of the SF NFH, including primarily the implementation of planning and control cycle of viability, liquidity and assets management in accordance with priority 6 of the State Forests Strategy	Operational/ Strategic
8.	Strategic balanced scorecard	Needs: – to generate useful information on the implemented non-productive functions of forest, – for measurements of the SF NFH achievements, – for reliable valuation of forests, – for assessments of institutional units of the SF NFH, – for translation of the mission, vision and the adopted strategy into actions of operational character determining the realization of its six priorities	Strategic
9.	Benchmarking	The need to learn the best practices in the scope of finance, management and accounting from the entities of a similar organizational structure, mission, vision and strategy, with particular consideration to those aiming at implementing the concept of corporate social responsibility	Strategic

Source: author's own elaboration.

The possibilities of implementing management accounting tools in the State Forests

The implementation of management accounting tools in a given entity always depends on the determinants of facilitating or impeding character. The application of management accounting tools should always be preceded by the objective analysis of subjective factors existing in the SF NFH. Therefore, the following determinants are the subject of consideration:

1. The level of managers' awareness – it has considerable influence on the disclosure of the need determining the decision concerning the implementation of a tool or the selected tools of management accounting in the SF NFH. Creation by the SF NFH of the mission, vision, strategy and its map clearly indicates the appropriate level of manager's awareness of the entity. Nevertheless, it is desirable to familiarize the

decision-making people of different institutional units with the solutions from the system of management accounting allowing for the realization of all the priorities included in the adopted strategy map both in the operational and strategic mode.

2. The adopted business activity register. The SF NFH is covered by the Accounting Act and, therefore, „bookkeeping" generates the most reliable information of financial and economic character in relation to the taxation forms provided for by the tax law. The accounting books are based on the appropriately organised documentation, the accounting records and reporting and in the context of the system of management accounting they constitute the fundamental system generating primary information, which are transformed in such a way to present useful secondary information only after the implementation of the selected tool.
3. Free resources required for implementation. In this area human factor is undoubtedly the most important. The suggested tools of management accounting are only the potential tools facilitating management in the SF NFH. It is only the appropriate knowledge, skills, social competence and experience of motivated employees that determine recognition of the need to use, appropriately implement and effectively apply the selected solutions. At the same time, the lack of sufficient motivation may lead to considerable human resources resistance. It may result from the inability to see the implementation need, benefits for the entity as well as those individual ones in the form of financial or non-financial incentives. Another essential determinant is the level of free financial resources. It refers to the so called friendly IT environment, determining the combination of the tools of the financial and management accounting system, as well as to other assets required for the functioning of structures responsible for conducting management accounting.
4. Potential costs and benefits resulting from the implementation of selected solutions. In this case, the fundamental activity is to specify only essential potential benefits and costs related to their achievement as well as to present them to decision-making people and the executive staff. Success, viewed in the context of effectiveness, depends on whether employees understand the need to implement the selected solution and, what is most important, what benefits it will bring for the SF NFH taking into consideration, at the same time, the costs resulting from both preparatory and implementation works and from the application of the selected tools.
5. Organizational structure – it constitutes the factor, which may facilitate or impede the implementation of the management accounting system. In the case of the SF NFH, it is an extensive structure, in which the basic institutional units (forest districts) are relatively autonomous in relation to management on the one hand and on the other hand, however, they are subordinate to the General Directorate of State Forests as a result of centralization. Therefore, the appropriate polarization of management accounting tools should be performed, dedicating the selected ones for the Directorate and for forest districts.
6. Due to political, legal and social factors, the SF NFH cannot be treated as an autonomous enterprise. Law regulations clearly determine that this statutory monopolist is not profit-oriented and, from the political perspective, indicate the need to pay 2% of revenue to the state budget. On the other hand, however, fulfilling free of charge social and protective functions by the State Forests results in the need to build appropriate communication based on the concept of corporate social responsibility considering also the principles of sustainable development.

The indicated factors constitute the basis to formulate conclusions concerning the current challenges for the system of management accounting in the SF NFH which is the subject of further considerations.

The challenges of management accounting in the State Forests

Defining and undertaking key challenges for the management accounting tools in the State Forests should be structured in consistent and subsequent stages. The most important involve:

1. Diagnosis of the current knowledge on theoretical and implementing aspects of the management accounting system application in the SF NFH.
2. Financial and accounting audit in the State Forests, mainly of accounting books as a fundamental information system, indicating its dysfunctions as well as desired directions of changes. More about desired directions of changes in: (Szczypa, 2016).
3. Defining current information needs in the SF NFH, disclosure and recognition of new needs and the ways to satisfy them.
4. Management audit, in particular of the mission, vision, strategy, management methods, organizational structure as well as of the current management solutions.
5. Designing information system of the 'financial and management' character, implementation solutions, defining benefits and costs as well as securing necessary resources for realization.
6. Delegation of powers and responsibility, trainings as well as implementation of the accepted solutions dedicated to the General Directorate of State Forests and basic institutional units – forest districts when applying the selected implementation solutions.
7. Continuous monitoring of performed works, implementation of the planning and control cycle, including reporting, deviation analysis, identification of its reasons as well as undertaking remedial actions.
8. Continuous efforts to minimize the problem of information asymmetry, defined as the considerable discrepancy in the usefulness of the same information for financial and accounting teams, controllers and managers.
9. Popularization of developed solutions in the scope of the accounting system, including management accounting in the SF NFH in scientific environment and among practitioners, integration of both environments as well as looking for new solutions based on the accounting system.

It can be assumed that the major and complex challenge for the system of management accounting in the State Forests is acceptance and implementation of the discussed procedure into the mission, vision and strategy map of the SF NFH. The nature of management accounting instruments makes it possible to effectively conduct sustainable economy in the forests taking into account the primary economic function as well as hardly quantifiable and, at the same time, much more valuable social and protective functions. The challenge that the system faces should be correlated with the following priorities resulting from the strategy map (http://strategia.lasy.gov.pl):

Priority 1: Ensure forests preservation (forests as the most important element of environment).

Priority 2: Ensure the availability of forests for the society (forests as social goods).

Priority 3: Ensure a significant contribution of the State Forests into economic development (forestry as an important sector of economy and a creator of rural areas development).

Priority 4: Become a modern, well managed and efficient organization.

Priority 5: Develop staff resources and competences as well as motivate them to implement the strategy.

Priority 6: Ensure the ability of business self-financing.

When analysing the above priorities we may conclude that the first three are of socio-economic character, whereas the other three are of financial and management nature. The challenge for management accounting in the SF NFH is undoubtedly the realization of priorities: 4, 5 and 6, in the first place, which will eventually result in indirect realization of priorities: 1, 2 and 3. The desirable action would be to present the system of management accounting on a clear strategy map of the State Forests combining all its elements.

Implementation of the discussed priorities by applying the said procedure of management accounting should be of operational character, which means that it is necessary to define submeasures, among which we may distinguish the following (Adamowicz, Szczypa, 2014):

- *ex post*, *in tempora* and *ex ante* quantification of the forest value,
- valuation of non-productive functions of forest; more about valuation in SF NFH in Nemś, Sadowska, Szczypa (2018),
- useful valuation of 'standing timber' and 'logged timber' production,
- managing finances of forest districts,
- multi-criteria assessment of institutional units of the SF NFH.

Moreover, specific activities should be related to the present functional classification of the State Forests tasks which would additionally increase the effectiveness of the whole accounting system, including management accounting.

Conclusions

Continuously evolving determinants of the environment (both external and internal) of the SF NFH as well as the increasing role of non-productive functions of forest in the context of conducting sustainable forestry economy result in the need to identify and understand current information needs as well as to recognize new needs and the ways to satisfy them. The considerations undertaken in the article enabled the author to positively verify the adopted hypothesis. They were also aimed at the implementation of the assumed goal through the analysis of the fundamental tools of management accounting in the context of their potential application in the State Forests for the selected institutional units. Additionally, when identifying the facilitating and impeding determinants, the author indicated the possibilities of applying the discussed instruments in the State Forests. Finally, after the analysis of the mission, vision, strategy, its map, functional tasks, organizational structure, etc. the author identified the major challenges of the management accounting system in the SF NFH.

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SPROUT OF E-ENTERPRISES STIMULATED BY PUBLIC SUPPORT

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ABSTRACT

The aim of this paper is to report selected results from an analysis of Internet-based e-services that were created with the support of the EU sponsored Operational Programme for Innovative Economy run by the Polish Agency for Enterprise Development (PARP). From 2008 to 2014, PARP allocated funds for the creation of 2,730 enterprises that develop new e-services. Efficiency of this public support is the focus of this paper; however, there exist no simple means to measure and assess it. Analysis takes advantage of different metrics that can be applied to a numerous set of web pages. The main finding of the paper is that the scheme produced a negative value in terms of its effectiveness, thus raising an issue of rationality of public intervention in Internet-based e-services sector. In comparison with other papers dealing with various subsidy schemes, we did not assume a priori that the subsidy outlays would bring positive effect, allowing for unrestricted assessment of the results obtained in the scheme.

Introduction

Subsidizing economic activities always is controversial. Numerous arguments have been given as an excuse for channeling public money into private enterprises, including market imperfections and R+D provision as public good alike (Santamaría, Barge-Gil, Modrego, 2010). Moreover, as (Heijs, 2005) argues, although the majority of developed countries have implemented manifold measures of support, yet the evaluation of these instruments

still proves to be underdeveloped. The evaluation is based generally on the "additionality" principle, which attempts to establish the difference that such support made upon the company performance (Herrera, Bravo, Ibarra, 2010). The difficulties however arise with an appropriate control group and lack of access to the data of an individual beneficiary. Thus, application of classical cost-benefit analysis is allowed, with an attempt to accurately separate benefits brought by public intervention. Moreover, as (Blanes, Busom, 2004) stated, reaching targeted population depends on well-defined selection criteria and procedures for project selection and funding. However, most of the papers dealing with the evaluation focus on the characteristic of the beneficiaries' population (Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, Boronat-Navarro, 2004) such as size (Carmichael, 1981) or ability to capture many grants (Lerner, 1999), but what is rare is a search for valuation of final results. Therefore this paper attempts to provide an analysis of the effects of subsidizing e-services projects by studying 2730 specimens involved in the relevant scheme of innovation support in Poland. In doing this, the purpose of the paper is threefold: 1) to identify a methodology of e-services valuation that will be relatively free of above-mentioned evaluation deficits; 2) to analyze the whole sample; 3) to attempt to establish an overall efficiency resulting from the public agency's decisions.

After joining European Union (EU) in 2004, Poland has been the target of an inflow of significant EU structural funds aimed at bridging the development gap, distributed mainly in form of non-returnable grants. Some 14.2 billion EUR was disbursed over 2004–2006 period and almost 68 billion EUR in the years 2007–2013 (Misiąg, Misiąg, Tomalak, 2013, p. 9). Around 30% of funds has been directed to enterprises, and over the 2007–2013 period the key leading scheme in this respect was the Operational Programme for Innovative Economy (OPIE). Within its framework, entrepreneurs, business support institutions, research entities and institutions of public administration were granted funding exceeding 10.2 billion EUR for implementation of different kinds of projects that aimed the innovativeness of the economy and enterprises in Poland (more on innovation strategy in Poland in: Prorokowski, 2014). This paper however, will focus on Measure 8.1 of OPIE, which is a unique scheme developed to support the growth of e-services. The purpose of this activity was to stimulate the development of electronic economy, by encouraging the creation of new e-services. Until the end of 2014, 13 calls for projects had been made, attracting all together 15 240 applications, out of which 2730 agreements were signed. The amount of awarded funding exceeded $ 1 billion 495 million PLN (equivalent of some 360 million EUR – Table 1 depicts subsidy distribution). Within the scheme, a newly created company could have been granted up to 85% of eligible costs, subject to a maximum value of 200,000 EUR equivalent. However, both the maximum value of a grant and the share of the subsidy were both decreasing over the 2008–2013 period, down to 130,000 EUR and 70% respectively over last calls. After its early period in 2008, the programme became so popular in 2009 that allocated funds were not sufficient to cover all the selected projects. This led to a significant change of requirements and resulted in a lower number of eligible applicants from 2010 onwards.

Table 1. Subsidy value distribution _Measure 8.1 OPIE

Subsidies number	Subsidies value (PLN)	Mean value	Standard deviation	Max value	Min value
2730	1,502,374,719	550,320	184,193	850,000	19,635

Source: own study based on PARP data.

Measure 8.1 is a unique action in many respects. As a large scale activity focused solely on start-ups offering e-services (compare (Arduini, Zanfei, 2014) for discussion of e-services), it brings a clear perspective for assessing supported companies development as in majority these enterprises were established as new vehicles dedicated solely to the supported activities. Thus, unlike in many development schemes, where publicly backed projects contribute only to a fraction of the company revenue, here an assumption that equates the project value with the company's value can be applied.

Therefore, questions we have posed for the research are: What is the percentage of the created e-services that succeeded against the ones that failed? What is the value of supported e-service? And finally, what is the relation between the value of public funding and the final product of the scheme?

Related Works

Different techniques and tools for comparison, assessment, valuation and pricing of websites have been widely used for many years. The huge Internet advertising market fuels the development of such tools. Surprisingly, there is very little research related to this subject. Below there are pointed just the most interesting that we have found.

Hu and Zhu (2013) analyze competitive intelligence factors possessed by websites. They argue that analyses of websites factors are an effective way for an enterprise to find its own as well as competitors' strengths and weaknesses. Next, an enterprise can adjust its market competition policies to obtain strategic advantage. Gneiser, Heidemann, Klier, Landherr, Probst (2012) propose an economic model for the valuation of online social networks. The result of their model was in the range of the market capitalization at the instant of XING's valuation.

Other work on value estimation of online social networks was presented by (Mchawrab, 2012). What is interesting is that Mchawrab shows a strong difference between the stock market value of an e-enterprise share and the company fundamentals (based on current book value and value of estimated future cash flows), where the stock market value is surprisingly high.

The mentioned works use website popularity indicators to draw conclusions about e-services or e-businesses in different contexts. The indicators are very useful for the comparison of similar e-services and for the evaluation of an e-service changes over time. Such data are objective and can be gathered automatically for large number of websites.

Approach to Value Analysis of Created E-Enterprises

The paper attempts to analyze the value of the e-enterprises that appeared thanks to the OPIE. It is worth noting that the rate of success measured in terms of application to grant ratio was 17.21%, while in terms of value awarded to value requested, it amounted to 18.56% (Moroz, 2014, p. 122). The final number of projects supported, i.e., 2730, is too large for direct interviews or manual assessment of their web pages. Scripts in the Python language were used to automatically query selected valuation services, which are unprotected for automatic queries (e.g. by Captcha code). Our scripts query alexa.com, siteprice.org and worthofweb.com.

1,712 web addresses were found, marking impression about their websites' activity and topicality. We recognized a website as active, if there were visible traces of any changes no older than 5 months. Figure 1 allows one to expect that about 50% of found webpages evolve, which is a must for e-services' existence.

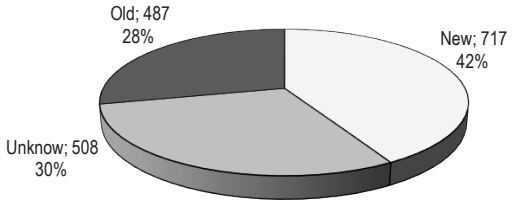


Figure 1. Websites with new content, i.e., no older than 5 months

Source: own study.

The rate of found addresses of all granted projects calculated at 59% is surprisingly low. It is possible that some projects evolved strongly and some subsidized enterprises changed their names, some grants were allocated for the creation of e-services components, thus the results are invisible as final services. Without in-depth analyses of the grant contracts, it is difficult to determine the number of such projects. Nevertheless, what seems most probable is that most of the e-services that did not appear online just failed (458 contracts terminated). Still, the number of located services is big enough to enable us to draw several conclusions on the sample. Some of the web domains were designed neglecting the aspects of self-promotion, which leads to a decrease in website values. For example, there are 114 e-services where a user has to register to be able to use them, and 14 of them do not provide any information without registration. Moreover, the website worth calculators distinguish neither subdomains of 4th and lower level, nor e-services located as subpages of a given domain. In consequence, those e-services which were located under the umbrella of a corporation website or under the umbrella of a hosting provider enterprise could not be evaluated. There were only 14 such websites in the analyzed set. There were also 23 websites rejected by siteprice.org from assessment due to their content. Siteprice.org adsense policy excludes websites which are suspected to be unsafe or provide restricted content (porn, gambling, poker, casino, violence, etc.)

We gathered data related to the subsidized websites from alexa.com, siteprice.org and worthofweb.com as of 2015. The data allow comparing the value of websites erected as a result of each OPIE call. Below, we shall present selected results from the comparison. Next, we will try to provide conclusions about the efficiency of the subvention programme by juxtaposing the subsidies against the values of the websites.

Assessment of Subsidized Enterprises

The number of found e-services is substantial. However, Internet visibility does not imply that a service has any users. It is considered that a web page has non-negligible usage, if alexa.com publishes its rank. Our observations of e-services confirm this consideration. Moreover, most valuation services process only the e-services which are ranked by alexa.com. There are only 743 ranked e-services, i.e., 27% of all subsidized projects, see Figure 2. Only 26% of all funding yielded e-services of non-negligible usage, see Figure 3. Analysis of the same distribution per every grant list allows to conclude that the percentage of those not found is greater for older grants while the percentage of those not ranked is greater for younger grants. The observation shows that web sites have to mature to be ranked, and those that are not good enough die with the passing of time. Figure 4 shows the number of grants, found e-services and ranked e-services per grant list. We can infer from it the mentioned observation and that there are no big differences in the proportion of ranked and not ranked e-services per grant list.

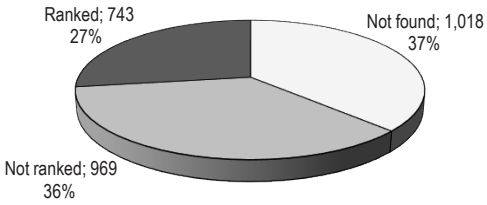


Figure 2. Number of subsidized e-services

Source: own study based on worthofweb.com tool.

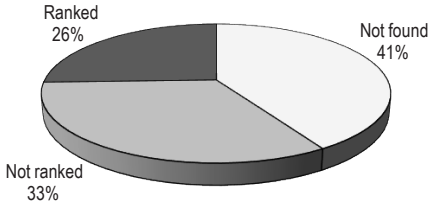


Figure 3. Granted funding for e-services

Source: own study based on worthofweb.com tool.

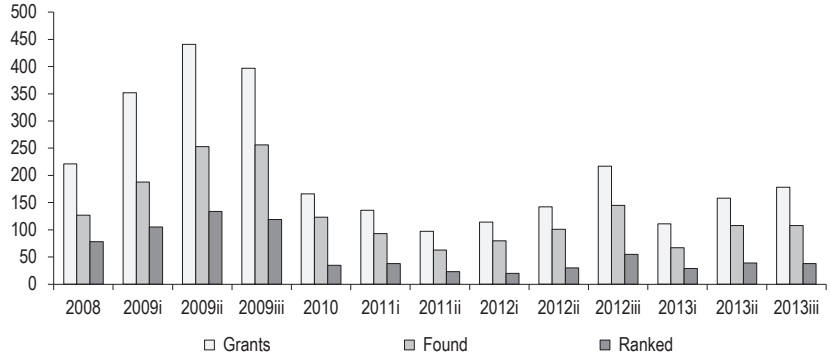


Figure 4. Numbers of grants, found e-services and ranked e-services by alexa.com

Source: own study based on alexa.com tool.

Figure 5 depicts distribution of Alexa ranks per grant list. Due to Alexa algorithm, the big values are very unstable. Median and 1st quartile are more conclusive values. We can observe from them that older e-services are ranked better (lower values) than younger e-services. The explication of it is that a few years have to pass for an e-service to hold significant number of internet users, even though new services arouse interest of web users, and additionally, upon their launch more effort on advertising and search engine optimization is made.

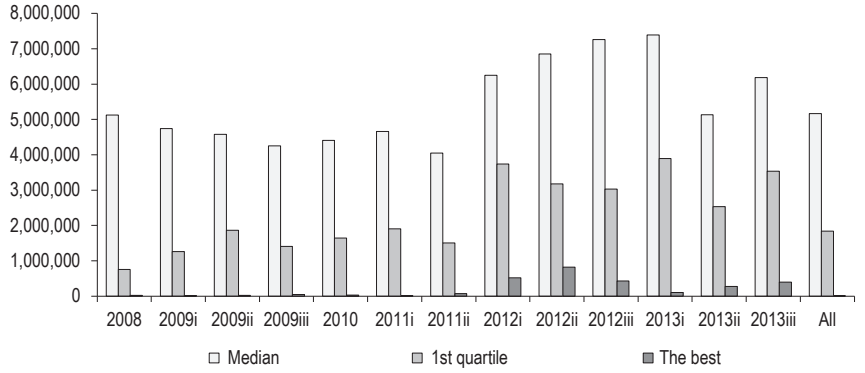


Figure 5. Alexa ranks

Source: own study based on alexa.com tool.

The values gathered from worthofweb.com and siteprice.org are presented in the order from the best to the worst and depicted in Figure 6. There are very few sites of relatively high value, while all other seem not to differ much. Moreover, SitePrice calculates worth of more websites than WorthofWeb. The reason is that SitePrice processes a website even if there is no Alexa rank for it, while WorthofWeb demands Alexa rank lower (better) than 30,000,000. Table 2 gives more visible values. The rise of the value for the 95% of the population is almost linear. Only the best 5% of the population differ significantly.

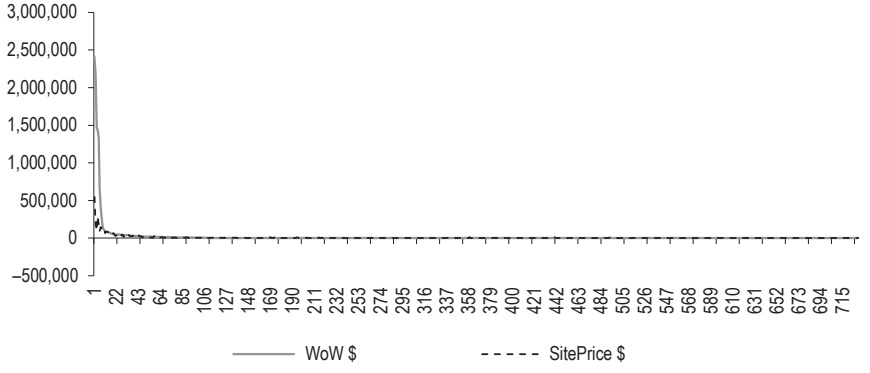


Figure 6. Website values by worthofweb.com and siteprice.org

Source: own study based on worthofweb.com and siteprice.org tools.

Table 2. Distribution of SitePrice and WorthofWeb values

	The best	1st quartile	Median	3rd quartile	The worst
Site Price $	547,844	1,303	311	94	2
WoW $	2,408,800	2,141	483	105	57

Source: own study based on worthofweb.com and siteprice.org tools.

The values calculated by SitePrice and WorthofWeb differ sharply. There are sites highly valuated by the first calculator and very low by the other and vice versa. Their relative difference (i.e. (WorthofWeb_value – SitePrice_value)/WorthofWeb_value) varies from –7,647% to 93%, while the median of the relative differences is –95%. The two calculators use own algorithms, thus it is impossible to state which factors lead to the differences. One noticeable factor is that SitePrice.org adds the estimated value of domain name to its result. Traditional methodologies of enterprise valuation (i.e. current book value, reconstruction value, future cash flows prediction, liquidation value) usually also give very different results, even if applied very meticulously. Hence the discrepancies between SitePrice and WorthofWeb values do not surprise or depreciate them.

Conclusions

This paper is an attempt to base grant analysis on quantitative data. Our findings can be thus useful in preparation of future grant schemes and subsidy programs. Politicians often argue for public financial support on the base of theoretical and qualitative comparisons. Our findings give opposite arguments, which are based on measured data from a meaningful subsidising program.

From the collected data we can infer that the average value of a supported, visible and measurable e-service is $ 3,184 SitePrice and $ 18,101 Worthofweb, while the mean value of subsidy was 550,320 PLN, i.e., 145,626 USD. Obviously, the estimation of the fundamental value of a company, regardless of its type, cannot be limited to a mere numeric representation. Nevertheless, in the case of the analyzed support scheme an estimated overall return on public investment ranges from 2.34% (SitePrice, 1,579 cases included) to 12.81% (WorthofWeb, 708 cases), which brings forward an issue of inefficiency of large-scale publicly organized e-services support schemes. Our results show that it neither leads to the creation of valuable commercial entities in terms of visitor numbers, nor to the development of public-good services, as numerous examples of these represent not upgraded content and their maintenance is limited. Judging by our analysis it is hard to conclude whether it is rather a question of proper selection or perhaps other issues that hamper programme results. But even with an improved selection procedure, any future support scheme would have to cope with the question whether the traditional notion of industrial public support is still applicable to e-services. Perhaps instead of backing the supply side in this case, it is rather the demand-side or just consumers that should be supported in their use of e-services. Alternatively, within the already existing subsidy schemes, financial aid can be provided for actions focused on implementing Internet-oriented dimensions of companies' activities.

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FINANCING LOWER-SECONDARY SCHOOLS FROM THE EUROPEAN UNION FUNDS AND THE SCHOOL EDUCATION SYSTEM REFORM IN POLAND

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ABSTRACT

The reform of the school education system in Poland launched during the 2014-2020 programming period may have consequences for the absorption of EU funds due to the planned phasing out of lower-secondary schools. This issue deserves consideration with regard to the efficiency and rationality of allocation of EU funds in the area of public policy of an EU Member State. The purpose of this article is to investigate the following questions: 1) What is the potential risk of the EU authorities demanding repayment of EU funds allocated to lower-secondary schools due to their phasing-out?; 2) Is it admissible to apply for EU funds by lower-secondary schools during the phasing-out period? The applied method included review of documents regarding legal conditions in the two periods of EU programming in Poland, i.e. years 2007–2013 and 2014–2020, as well as the review of literature on local self-governments' finance sector. The conducted analyzes refer to the official statement issued by the Ministry of Development regarding the research questions addressed in this paper. The study concludes that there are indicators that repayment of EU funds already awarded to lower secondary schools may be demanded and the admissibility of application for EU funding for these schools during phasing out period may further increase the financial burden on local self-governments in communes.

Introduction

Economic and political integration within the European Union (EU) creates the need to regulate the relationship between the Union's political and law system and the equivalent systems of individual member states (see Nuzzo, 2015, p. 172). Poland's membership in the European Union and the simultaneous lack of membership in the monetary and economic union significantly affect Polish finance law and the actual functioning of the state

within the applicable finance law of Poland and the European Union (Kosikowski, 2014, p. 15). An example of the lack of synchronization between the EU finance system and the finance system of Poland seems to be the case of school education system reform, which involves phasing-out of lower-secondary schools – the beneficiaries of EU funds. The implementation of this reform during the 2014–2020 programming period may have consequences for the absorption of EU funds. This issue deserves consideration as every Member State is required to respect the provisions of Art. 71 of General Regulation No. 1303/2013 and Art. 57 of General Regulation No. 1083/2006. The articles provide that an operation retains the contribution from the Funds only if that operation does not, within five years from the completion of the operation, undergo a substantial modification affecting its nature or its implementation conditions. Despite the importance of these provisions, in Polish literature on the subject there is no analysis of the possible risk of the demand of repayment of EU funds resulting from the implementation of new public policy. Previous studies in this field mainly addressed the following issues:

1. Barriers in application for EU funding by local self-governments (reports of Province Job Centres, pp. 4–5).
2. Efficiency in absorbing EU funds with the use of macroeconomic models (i. a. Tracz-Krupa, 2015, p. 341).
3. Effectiveness of EU support (i. a. reports of the Ministry of Infrastructure and Development, 2014).
4. Comprehensive analyses of the EU budget (i. a. publications of the European Commission: European Union public finance; Financial Regulation applicable to the general budget of the Union and its rules of application).

Another inspiration to address this issue was the standpoint of the Ministry of Development (MD) obtained under public inquiry in 2017. According to the Ministry the liquidation of lower-secondary schools does not automatically imply the loss of EU funding for projects implemented by these schools. The commitments resulting from the need to preserve the sustainability of the EU funded operations will be transferred to other actors (schools, educational institutions, and governing bodies) within the framework of legal succession, provided that the operations' intended objectives continue to be implemented and the educational functions of infrastructure co-financed by EU funds are maintained. Furthermore, the changes resulting from the reform of the school education system do not impose the obligation to stop allocating EU funding to lower-secondary schools. With regard to the abovementioned approach, the objective of this article is to investigate the following questions:

1. What is the potential risk of the EU authorities demanding repayment of EU funds allocated to lower-secondary schools due to their phasing-out?
2. Is it admissible to apply for EU funds by lower-secondary schools during the phasing-out period?

Method

Taking into account the research questions and the time of writing this paper, (preceding the period of phasing-out lower-secondary schools under the Education Act of 14 December 2016 and Regulations introducing the Education Act), the applied method included review of documents regarding legal conditions of the two periods of EU programming in Poland, i.e. years 2007–2013 and 2014–2020, as well as the review of literature on local self-governments' finance sector.

The risk of recovery of EU funds allocated to lower-secondary schools with regard to the statement of the Ministry of Development

The statement of the Ministry of Development is controversial. Bearing in mind the requirement of sustainability of operation results, in the case of phasing-out of lower-secondary schools the following scenarios may unfold:

1. If the lower-secondary schools are not transformed into a different type of school, it would be appropriate to expect the EU decision to recover allocated funds. It is on condition that the effect of lower-secondary school projects is shorter than the required period of five years after the last payment from EU funds to a school.
2. If the lower-secondary schools are transformed into a different type of schools, there are still indicators that a decision to recover EU funds can be taken. It is because the description of the results will not be consistent with the new type of school setting. The applicants for EU funds for lower-secondary schools were obliged to describe of each element of the project with regard to the specificity of this stage of education and that included: justification of the project implementation; formulation of the objectives of the project; identification of the target group; description of the project tasks; risk assessment; added value of the project, the management team and the project budget.

The consequence of failure to preserve the sustainability of the project is the need to repay EU funds allocated in accordance with the instructions contained in art. 207 sec. 1 of the Public Finance Act of 27 August 2009 (hereinafter referred to as PFA). This provision implies that in the case where funding allocated to the implementation of programs co-financed by European funds are:

- misused,
- used in breach of the procedures referred to in art. 184 PFA,
- acquired illegally or in excessive amount,

the unduly amount is subject to repayment by the beneficiary together with interest at the rate determined for tax arrears, calculated from the date of transfer of funds, within 14 days from the date of delivery of the decision to return the funds to the bank account indicated in the decision. Funds incorrectly spent become public funds constituting non-taxable budget receivables of public and legal character.

The procedure for recovering EU funds is of an administrative nature. The authority acting as the Managing Authority (MA) / Intermediate Body (IB) issues a decision specifying the amount to be repaid, the date from which interest is charged and the method of repayment. In cases regarding receivables not regulated by PFA, the provisions of the Code of Administrative Proceedings (hereinafter referred to as CAP) or Section III of the Tax Ordinance Act (hereinafter referred to as TOA) shall apply. It is worth to devote attention to the amount to be returned. According to article 207 section 9 of the PFA – the authority (...) issues a decision determining the amount to be repaid. The amount to be repaid is therefore determined in the decision by an authority that is not bound by any regulations. The upper limit for the amount to be repaid is the amount of funding provided to the beneficiary. When estimating the amount to be repaid, it is important to note that payments and subsidies are given in separate tranches and may be transferred to the beneficiary on different dates. In such cases, the amount to be repaid should be the sum of the separately calculated amounts: for payments and for subsidies. The decision should also specify the method of repayment – deduction of another payment or return to a bank account (see Rogowski, 2011, pp. 6–12).

The appeal procedure against the decision regarding the recovery of funds is regulated in art. 127 of the CAP and following articles (Chapter 10, Section II) with art. 67 of the PFA. However, the authority is not bound by the findings of the audit – it is possible to provide evidence against the content of the documents (results, minutes, inspection reports). On the other hand, according to art. 66 of the PFA the enforcement of claims is regulated by the Act of 17 June 1966 on enforcement proceedings in administration. It is should be noted here that, as for the legal forms securing recovery of unduly payments, the executing authority may only initiate administrative enforcement on the basis of an enforceable title (Pismo DKR-VII-8261 (0) – 46-MWi / 11, pp. 1–2).

Furthermore, there are doubts concerning the concept of legal succession proposed by the Ministry of Development. Succession is a transfer of a legal title that results in a legal succession relationship between the previous holder of the title and the acquirer. The opposite of a succession which involves a derivative acquisition (Wolter, 1972, p. 121) is a primary acquisition, where the legal title is not transferred from an individual who formerly held it (it does not depend on the fact that the right was previously vested with a particular entity) (Radwański, 2009, p. 100). Derivative acquisition may take place under the general title (universal succession) or the detailed title (singular succession). None of these legal constructs is intended to transfer the sustainability of the lower-secondary school project results. In the case of universal succession (acquisition of all property rights on the basis of a single legal act) it is possible only in the cases specified in the law (e.g. inheritance, acquisition of inheritance, transformations of commercial companies or merger of legal entities). Essential standards for universal succession are laid down in:

- Commercial Companies Code (articles 494 and 531),
- Tax Ordinance Act (articles from 93 to 107),
- Civil Code (article 922).

In turn, examples of singular succession (the purchase of a single, individually designated right from the seller) is e.g.: sale, exchange, donation of specific items, payment of a sum of money from the bank account to the person named in the agreement after the death of the holder of this account.

It should be emphasised that the repayment of EU funds transferred to lower-secondary schools will burden communes (their governing bodies) with the obligation to indicate the source of coverage of the amount due. If it is decided to provide the needed funds from external sources, the individual debt ratio (IDR) should be taken into account. The amount of debt limit for local self-governments is regulated by art. 243 of the PFA. The IDR system makes the planned amount of liabilities (debt) dependent on the ability to repay those obligations. Creditworthiness is calculated by taking into account the financial surplus, in accordance with the formula for limiting the repayment of liabilities as defined in that provision:

$$\left(\frac{R+O}{D}\right)_n \leq \frac{1}{3}\times\left(\frac{Db_{n-1}+Sm_{n-1}-Wb_{n-1}}{D_{n-1}}+\frac{Db_{n-2}+Sm_{n-2}-Wb_{n-2}}{D_{n-2}}+\frac{Db_{n-3}+Sm_{n-3}-Wb_{n-3}}{D_{n-3}}\right),$$

where:

- R – Planned for the fiscal year total amount due for the repayment of loan and credit instalments and redemption of securities – payments to debt incurred to maintain liquidity and repaid by the end of the financial year are not included in the expenditure on this account,
- O – Planned for the financial year interest on loans and interest and discount on issued securities as well as repayment resulting from the granted sureties and guarantees,

D – Total budget income for the financial year,
Db – Current income,
Sm – Asset sale gains,
Wb – Current expenditure,
n – Financial year for which the relation is determined,
n – 1 – Year prior to the financial year for which the relation is determined,
n – 2 – Year two years prior to the financial year,
n – 3 – Year three years prior to the financial year.

The analysis of data from Multiannual Financial Perspective (Wieloletnia Prognoza Finansowa – WPF) aggregated from the reports on meeting obligations – a statutory instrument of control and monitoring debt (in force from 2014) – showed that in the years 2015–2018, hundreds of local self-governments will be unfit to incur new debt obligations in the form of loans, credits and securities. When formulating such opinions Regional Chambers of Audit (Regionalne Izby Obrachunkowe – RIO) take into account the methodology of Multiannual Financial Perspective developed by the Ministry of Finance according to which the key assumption made in the development of this document should be how much money a local self-governments have and not how much they need (Sołtyk, Dębowska-Sołtyk, 2016, p. 95). Exceeding IDR results in local government's inability to adopt the commune's budget. Consequently, the necessity to repay EU funds transferred to lower-secondary schools may require local governments to make significant adjustments in budget planning.

There is one more potential consequence of the recovery of EU funds transferred to lower-secondary schools. If the repayment of EU funds is not possible without exceeding the IDR, the local self-governments in communes may be interested in using non-standard debt instruments, i.e. commitments in the form of loan or credit agreements, although not included in the debt portfolio of the public debt. This category of instruments includes: equity financing, return sale, leaseback, instalment payment, subrogation (Kluza, 2015, p. 61). Their use is permitted by the Regulation of the Minister of Finance of 28 December 2011 concerning the detailed method of classification of debt instruments classified as public debt, but in the opinion of the Regional Chambers of Audit it is necessary to amend the statutory debt portfolio by including unnamed agreements with effects similar to loan or credit agreement. This is due to the fact that the calculations of Regional Chambers of Audit (*Niestandardowe*... 2016, pp. 23–31) show that there is a group of local governments that have been at risk of losing liquidity or have lost liquidity following the use of these financial instruments.

Applying for EU funds for lower-secondary schools during their phasing out with regard to the statement of the Ministry of Development

The opinion of the Ministry of Development quoted in the introduction raises doubts in at least three substantive areas:

1. Does not the acquisition of EU funds to support lower secondary schools during the 2-year phasing out period, (i.e. a period shorter than the required 5-year sustainability of the project effects), increase the risk of potential burdening communes with the financial commitments in the programming period 2014–2020 (Operational Program Knowledge Development Education – POWER / 16 Regional Operational Programs – ROP)? While in the programming period 2007–2013 the acquisition of EU funds for lower

secondary schools took place within legal framework securing the stability of school education system, during the implementation period of the EU programming 2014–2020 there was a change of legislation defining precisely the period in which lower-secondary schools will be phased out (1.09.2017–31.08.2019). Therefore, the application for EU funds for lower-secondary schools at the time of their phasing out implies that the Managing Authority's (MA) grants consent for communes' actions, which may result in the repayment of EU funds due to the lack of sustainability of project products.

2. What will be the effect of EU funding provided for lower secondary schools (investment in teachers, students, equipment, etc.)? There are two exemplary scenarios which can be explored: 1) the situation when the project effects cannot be used in the sector of public education services; 2) the situation when the received EU support will be inadequate due to the radical change in the functioning of schools in public education sector during and after the phasing-out of lower secondary schools. In the first case the illustration may be a situation of teaches who received professional training co-financed by EU funds, e.g. physical education teachers, who when dismissed from lower-secondary schools will look for a job outside the education system (e.g. in fitness sector). In the second case, the illustration may be the situation of lower-secondary school teachers trained in developing learners' key competencies who will be unable to implement their abilities in the new situation of being a 'touring" teacher' forced to work part time in a number of different schools.
3. What would be the financial impact for communes repaying EU funds transferred to lower-secondary schools in the 2014–2020 programming period if the state's education policy changed and school education system with lower-secondary schools was restored? Would communes be able to demand compensation for the recovered EU funds in the situation of restoring lower-secondary schools?

Conclusions

The conducted analyses show that there are indicators that repayment of EU funds already transferred to lower-secondary schools may be demanded and the admissibility of application for EU funding for these schools during phasing-out period may further increase the risk of increasing the financial pressure on local self-governments in communes. The conceptual approach outlined in this paper would require further research. The necessary actions which should be taken in the discussed area include:

1. Creating an interdisciplinary research team to estimate the amount of EU funds recovery for Poland as well as ex ante economic effectiveness (identifying and estimating expected effects, inputs and time) and ex post economic effectiveness (dealing with the outcomes of specific actions, i.e. real effects and input) (Penc, 1997, pp. 99–100).
2. Developing a financial support system for communes obliged to repay EU funds if the condition of sustainability of project results was not met due to statutory changes in the school education system in Poland.
3. Developing a communication strategy for Poland in the dialogue with decision-making bodies representing the EU regarding the possible recovery of allocated EU funds. This strategy should be part of the preparation of the Polish side to negotiate another EU budget under conditions of the likely concept of flexible integration (see Barcz, 2015, pp. 252 et seq.).

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TRANSPORT AS A PUBLIC GOOD

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ABSTRACT This article attempts to apply the theory of public goods to the transport sphere. The characteristics and classifications of specific types of public goods, i.e. pure goods, club goods, and common goods, are presented. In this respect, attention is paid to spatial, economic, social, and environmental criteria. The role of public goods in correcting the failure of market mechanisms should be emphasized. Defined through the prism of transport services, the lack of proper transport accessibility may be an example of the failure of market mechanisms. This is the case when the demand for transport services is low, which results in limited offers from market participants. The role of the central and/or local government is to correct this situation by assuming the role of public transport organiser in such areas. Transport infrastructure is another important element affecting transport function. As a public good, its significance is related to the characteristics of infrastructure, which include: a long development period, high capital intensity, and typically a long period of return on capital investment. These features mean that private capital rarely engages in the development of transport infrastructure.

Introduction

The theoretical aspects of public goods are subject to public sector economics research. Public goods are provided by the public sector due to both social and environmental considerations. The primary suppliers of such goods are the central and/or local government, which does not necessarily mean that these entities produce such goods. In this case, the public is associated with consumption, rather than the production, of such goods.

The social and environmental considerations result primarily from the failure of market mechanisms, which in turn results from the improper operation of such mechanisms. Such may be caused by low demand for the respective goods, among other factors.

The aim of this article is to present the features, types, and significance of public goods and to relate the theory of public goods to the transport sphere with particular consideration of transport infrastructure and transport services.

Concept and types of public goods

Economist Paul Samuelson formulated the concept of public goods in the 1950's. His work became the basis for the development of the theory of public goods, in which pure public goods were distinguished as the opposite of private goods (Samuelson, 1954). Public goods were recognised as those which serve an entire society and are characterized by egalitarian consumption.

Public goods were divided into pure public goods, common goods, and club goods. Pure public goods are characteristically non-rivalrous and non-excludable, which also results from high costs. The common goods, also referred to as common-pool resources, are also characteristically non-excludable; however, improper use of such goods results in their unavailability for others (for example, overfishing results in fewer fish being available in the future and overgrazing renders pasture land unusable). Examples of common goods are forests, pastures, water, and the atmosphere itself.

As Elinor Ostrom points out, it is important to determine the optimum usage of common goods (Ostrom, 1990, pp. 8–12). The Nobel prize winner showed that regardless a particular country's level of development (as divided into high, medium, and low development) the best solution is to entrust the management of common goods to local communities, thus rejecting the need for state interference (the nationalization of common goods) or their privatization.

Club goods, also referred to as social goods, are characteristically non-rivalrous and – in contrast to pure public goods – excludable. Due to their physical characteristics, these may be private goods (satisfying the individual needs of citizens and financed from private sources) or, primarily as a result of social policy, available, allocated, and financed (or co-financed) from public funds for a group of citizens as pure public goods. Examples include education, health care, and public transport.

Public goods are characterized by their physical indivisibility. This results in the inability to satisfy individual needs when accounting for consumer preferences. All users must adapt to the same standard (quality) of the available public good. In addition, high transaction costs limit excludability, yet simultaneous consumption does not cause any loss of performance, therefore associating such goods with zero marginal cost (Brol, 2010, p. 46). The cost curve for the production of pure public goods does not indicate variable cost.

In terms of characteristics, private goods are the opposite of public goods. Their purchase depends primarily on the financial capacity of the purchaser and on consumer purchasing preferences. Private goods may be consumed by one person (the purchaser) and therefore represent 'rivalrous' consumption.

Classification of public goods

The classification of public goods is relatively difficult, even in the context of distinguishing their characteristic features. The following criteria re most commonly applied (Kwarciński, 2016, p. 26):

- spatial – range of impact,
- social – public utility,
- economic – efficiency,
- financing – source of funding.

The territorial criterion makes it possible to distinguish public goods of local, regional, national, and global dimensions (Kaul, 2001, pp. 588–602). A smaller range of impact of public goods means greater restrictions on access to such goods by other people. Apart from the spatial approach, the range of impact may be determined by social status. An example may be public goods available only to selected groups of people, most often those of lower economic status.

When assessing the utility of public and private goods, it should be stated that public goods serve the general public and are therefore non-competitive, whereas private goods usually serve a narrow group of people (or in the extreme case one person), which results in competition for such goods. The utility of public goods is related with the activities of central and local governments and satisfaction of the collective needs of residents through the provision of public services, among other factors.

Services of public utility are an important element of the social security system and help to ensure social cohesion. Such services allow for the satisfaction of basic needs as necessary for the participation of residents in social and professional life, and are provided on a continual basis. They result from adopted social principles including solidarity and subsidiarity, thus making it possible to depart from the use of market mechanisms as the basic element controlling economic processes. The implementation of services of public utility may require restrictions on the freedom to provide such services on a commercial basis. Such restriction is predicated on the primary goal of public services, i.e. the most effective possible satisfaction of the needs of residents by the provision of access to public goods (*EC Directive 2006/123*).

Public goods are financed (or co-financed) from the public funds of central and/or local governments. As a result, collective consumption is financed externally, and the public good is available free of charge or for a small fee. This is a strictly theoretical approach. Public goods only appear to be free, and this may cause them to be misused or, in extreme cases, wasted.

Public and social goods (which may be private goods) are financed or co-financed from public funds (Owsiak, 2002, pp. 26–27). This assumption also means that social goods are excluded from the effects of market mechanisms. The rationale for the co-financing of such goods is social policy, which most often takes into account the need to protect vulnerable people who, due to lower income, may have limited access to some goods which are produced on a commercial basis.

The scope of provision of social goods depends on social policy and the public finances allocated for this purpose, the premise of which is to enable access to such goods. Without public support, either the use of social goods would be impossible or the scope of their provision would be much more limited, which is related to the allocation of resources on a commercial basis (Begg, 1997, p. 108).

Public goods are regulated by means of usage fees. These charges may be levied by central and/or local governments. One example is transport infrastructure, for which usage fees are charged. Usage fees may be considered as the fairest means of payment for the use of public goods, as they are based on the assumption that those who obtain greater benefits from such goods pay more (Stigliz, 2004, p. 152).

There are no fees for the use of pure public goods, for which consumption by subsequent entities is associated with zero marginal cost of production (Samuelson, 2004, p. 509). This means that the cost of producing a good is not higher than the cost of providing it to one person. Examples of such goods are lighthouses, street lighting, and national defence. The use of public goods allows residents to save funds for the purchase of other goods, including private property.

The function of public goods is to ensure the ongoing and uninterrupted satisfaction of social needs in those areas which are important to residents. This situation applies to public services in whose production the market is not interested, or in such case as a portion of the population is limited in its ability to purchase such services due to price or location. Public goods serve to improve the functioning of the state, including the quality of life of residents, by limiting the consequences of the failure of market mechanisms.

Transport as a public good

Transport may be characterised as a public good through the prism of its functions, the basic of which are related to social and economic development. In the social sense, transport ensures territorial cohesion and, by providing mobility, determines standard of living by meeting the natural needs for movement and social satisfaction, and helping limit the phenomenon of social exclusion (Załoga, 2013, p. 43).

In the economic sense, transport is a necessary condition for satisfying social and economic needs, taking into account the spatial distribution of settlement and economic centres. Important is the positive direct and indirect impact of transport on economic growth and competitiveness, which pertains to the efficiency and effectiveness of management processes.

Transport also affects the process of environmental degradation. Further socio-economic development necessitates consideration of the reduction of the negative impact of transport on the natural environment, which is reflected in the internalisation of the external costs of transport, among other processes.

Problems related to proper social, economic and environmental development are included in the concept of sustainable development, in which transport plays a large role. Barbara Pawłowska points out the need to bring transportation under the umbrella of sustainable development using an appropriate set of tools and indicators to monitor and evaluate the concepts implemented (Pawłowska, 2013, p. 169).

Transport infrastructure as a public good

When applying the theory of public goods to transport infrastructure, the leading role of government in the development and maintenance of such infrastructure should be emphasized. In this approach, the planning and financing of the construction and maintenance of infrastructure is of importance. Private capital is poorly suited to this important area of social and governmental function (except for a few specific examples). This may result from the long period of return on capital as well as uncertainty as to the profitability of the investment. In Poland, the national, voivodeship, county, and municipal governments are responsible for the development and maintenance of transport infrastructure, depending on the function of said infrastructure. The exception are cities with county rights that independently manage transport infrastructure regardless of the type of road. In other areas, responsibility is born by respective road managers, which results in varying road quality.

It is difficult to explicitly qualify transport infrastructure as any one of the categories of good distinguished in the theory of public goods. It may be considered as a public good, as a common good (a private good financed by

central and/or local governments), or a private good (motorways). As roads are distinguished by limited capacity, they cannot be considered as pure public goods. Lack of usage fees for roads contributes to increasing congestion, which generates negative effects (decreased speed , wasted time) for all users of the good. This situation also causes higher external costs (noise, environmental pollution). The need to pay usage fees for motorways and express roads (for freight transport) allows these roads to be classified as private goods.

As a public good, transport infrastructure remains an important factor when choosing locations for economic activity or human settlement. It also provides territorial, social, and economic cohesion. Among the functions of transport infrastructure distinguished in the literature, the spatial, economic, and environmental aspects are subject to broader analysis.

Research conducted on the impact of transport infrastructure as a public good refers to:

a) time – the quantitative growth and qualitative development of transport infrastructure contributes to shortening travel times;
b) cost – transport infrastructure improves investment attractiveness and capital productivity and contributes to technical progress;
c) efficiency – impact on the transport process, and directly on the efficiency of both producers and household budgets (lower passenger car operating costs).

In the context of the theory of public goods, the following characteristics of transport infrastructure are particularly important: the slow rate of qualitative development, technical and economic indivisibility, the primary nature of infrastructure expenditure, spatial and functional immobility, the unsuitability of private and foreign capital in construction and development of infrastructure, and high capital density (Grzywacz, 1982). These features make necessitate the involvement of central and/or local governments in the organization (development plans) and financing of transport infrastructure.

The role of transport infrastructure should be related to such elements of the theory of public goods as non-exclusivity and non-rivalrousness. The lack of direct usage charges for transport infrastructure, with the exception of motorways and expressways, enables it to be considered as public goods *sensu largo.* Such infrastructure is generally available, with all users paying usage fees indirectly (i.e. via fees included in the price of fuel). Non-rivalrousness refers to the ability to use transport infrastructure at any time. Capacity presents some limitation to this approach.

In summary, transport infrastructure has a decisive impact on transport function. As a public good:

– it promotes development and economic growth,
– it improves social and economic cohesion across an entire country,
– it stimulates sparsely-developed areas,
– it stimulates peripheral regions,
– it affects the efficient movement of people and goods.

Passenger transport services

Passenger transport services serve to satisfy social and economic needs related to production and consumption as well as those resulting from the desire to use cultural goods or maintain social ties.

Considering the features of public goods, passenger transport services may be classified as social (club) goods. This means that transport services could be private goods, however due to both their function and the

fact that they are publicly financed, they become social goods. The market for passenger transport services also includes transport services provided on a commercial basis (without subsidies), which can be considered as private goods.

Public mass transport services are connected with ongoing and uninterrupted satisfaction of the transport needs of residents. They perform many important social, economic and environmental functions, of which the primary include:

- providing access to products and services
- preventing social exclusion,
- reducing transport congestion,
- economic and functional stimulation of areas,
- ensuring a higher level of security,
- providing for better use of energy resources,
- reducing environmental pollution,
- providing for better use of space.

Conclusion

As the bodies responsible for defining the scope of public goods, the role of central and local government institutions is to determine the scope and means of delivery of such goods. This is based on ensuring ongoing and uninterrupted satisfaction of social needs in those areas which are important to residents and concerns public services in whose production the market is not interested, or in such case as a portion of the population is limited in its ability to purchase such services due to price or location. Public goods serve to improve the functioning of the state, including the quality of life of residents, by limiting the consequences of the failure of market mechanisms.

The significance of transport as a public good be characterised by its functions, the basic of which are related to social and economic development. In the social sense, transport ensures territorial cohesion and, by providing mobility, determines standard of living and helps limit the phenomenon of social exclusion In economic terms, this is an indispensable condition for satisfying transport needs, taking into account the spatial distribution of settlements. Further socio-economic development necessitates consideration of the reduction of the negative impact of transport on the natural environment, which is reflected in the internalisation of the external costs of transport, among other processes.

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ARTIFICIAL NEURAL NETWORK FOR OPTIMIZATION OF THE DYNAMIC LINEAR MODEL OF PRODUCTION

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ABSTRACT The article presents the usage of artificial neural network for optimization of the dynamic models of plants production. This approach for optimization is part of the production and quality management where it is very important to obtain a high-quality product. For production management many different models can be used. In the paper the differences between the staged production models were described. Also the characteristics of artificial neural network used to find solutions of the staged models were presented. Each dynamic model of plant production takes into account the crop rotation. The crop rotation is necessary to keep the soil in good condition and to obtain higher crops.

Introduction

Optimization process is very important in many areas of management, for example in: service management, production management, logistic management, finance management, information management, quality management, strategic management, risk management and many others. Presented in the paper optimization approach supports the production and quality management. The author presents concept of an artificial neural

network (ANN) for optimization of production linear models with a dynamic character. The ANN was used to determine the coefficients of the objective function, which was agricultural income from crop production.

The four years of production model includes plant changes by combining subsequent production periods with several conditions. Proper crop rotation is important for the plant production process because it contributes to keep the soil in good condition resulting in higher yields. Lack of proper plant changes results in soil degradation which may cause plant diseases and lower quality crop.

In the paper three dynamic models of plant production: serial, serial-parallel and parallel are considered. These models in details are described in (Landowska, Landowski, 2012, pp. 48–50). Moreover, in (Landowska, Landowski, 2012, pp. 48–50, Landowska, 2017, p. 6) the schemes of three optimization models are presented.

The serial model has four stages, in each stage one production period is optimized. In this model the results obtained after each of the four optimization stages are included in the next optimization step. The serial-parallel model is a two-stage model where in the first stage the first and the second production period are optimized while in the second stage the third and fourth production period are optimized. It should be emphasized that each stage in the serial-parallel model takes into account the results of the optimization from the previous stage. The parallel model is a one-stage model. In this model, all periods are optimized simultaneously taking into account the conditions that connect all production periods. This approach to optimization makes models dynamic in accordance with the Bellman principle of optimality (Bellman, 1957, 2003). Optimization of the production process in agricultural farms using dynamic parallel models has been described by Zaród (2004, pp. 405–415; 2008, pp. 429–435; 2010, pp. 261–267) and Więckowski (1982). In these works, the authors describe model solutions taking into account many production periods related to conditions including plant changes.

Dynamic models are used in many agricultural problems. For example, the use of dynamic models for management of forest plantations can be found in Hartman (1976), Kennedy (1986), Cacho, Hean (2004). Li et al. in (2007) built a dynamic model for forecasting infection of pear leaves. The influence of changes of the frost intensity on Scottish pine was modeled with the dynamic model (Leinonen, 1996).

The main goal of the paper is to use artificial neural network (ANN) to optimize plant production and choose this production model (serial, serial-parallel, parallel) for which ANN gives the highest income.

Characteristics of artificial neural network for production optimization

Artificial neural network (ANN) is based on the natural neuron (nerve cell). ANN is a network whose nodes are neurons. Artificial neurons have inputs in which the input signal is multiplied by appropriate weights, then calculation operations are performed using appropriate mathematical functions. The modification of the input weights means that at the output we can receive the signal that we expect. One neural network can have many neurons and it is the most difficult to set the network so that we get the signal expected by us at the output. Many algorithms that deal with the selection of appropriate weight values for the input signal have been proposed. Neural network tuning is called network learning or training (Rutkowski, 2005, p. 170).

An artificial neural network for optimization of the linear models was proposed by Kopeć (2004, p. 198). On this basis an artificial neural network was built for optimization the dynamic plant production model. The task is to minimize the objective function *f*:

$$\min f(x) = \min CX = \min \sum_{i=1}^{n} c_i x_i,$$

with constraint conditions: $AX \leq B$, $x_i \geq 0$, where A is $m \times n$ matrix, B is a matrix of $m \times 1$, X is $m \times 1$ matrix and C is a matrix of $1 \times n$. To find the maximum value of the objective function, the optimization of the function – $f(x)$ is needed.

Based on (Kopeć, 2004, p. 195) we will use the penalty function as below:

$$P(m)\begin{cases}=0 & for \quad m \leq 0\\ >0 & for \quad m > 0\end{cases}.$$

Thus, the function that will be optimized will consist of the objective function and the part of determining penalty:

$$E(x) = \sum_{i=1}^{n} c_i x_i + K \sum_{j=1}^{m} P_j\left(r_j(x)\right),$$

where $r_j(x) = \sum_{i=1}^{n} a_{ji} x_i - b_j$, $K > 0$, $i = 1, ..., n$; $j = 1, ..., m$; $m, n \in N$.

If the model constraints are satisfied then value of $r_j(x)$ is equal or less than zero, it means that the solution received is acceptable. Otherwise, $r_j(x)$ is greater than zero, which increases the value of the function $E(x)$.

For the penalty function $P(m)$, the signal s_{1j}^k in the neural network is as follows:

$$s_{1j}^k = \begin{cases}0 & for \quad r_j^k(x) \leq 0\\ K & for \quad r_j^k(x) > 0\end{cases}.$$

The signal at the output from the second layer of neurons equals:

$$s_{2i}^k = \sum_{j=1}^{m} a_{ji} s_{1j}^k + c_i.$$

The signal correction is made according to the following formula:

$$s_{2i}^k = s_{3i}^{k-1} - \mu_i \times s_{2i}^k,$$

for $k = 1$ vector s_{3i}^0 has values equal to zero.

At the end of each iteration, the constraint conditions are checked and if all solution values are greater than or equal to zero. If these conditions are not satisfied, the operation of maximizing the output signal follows the formula:

$$x_i^{k+1} = \max\left\{0, s_{3i}^k\right\}.$$

Iterations are performed until the stop condition is satisfied. As a stop condition, it can be taken a threshold which is the difference between the received values of the output signal in subsequent iterations, e.g. 0.01 or 0.05.

The scheme of an artificial neural network for optimization of plant production is shown in Figure 1.

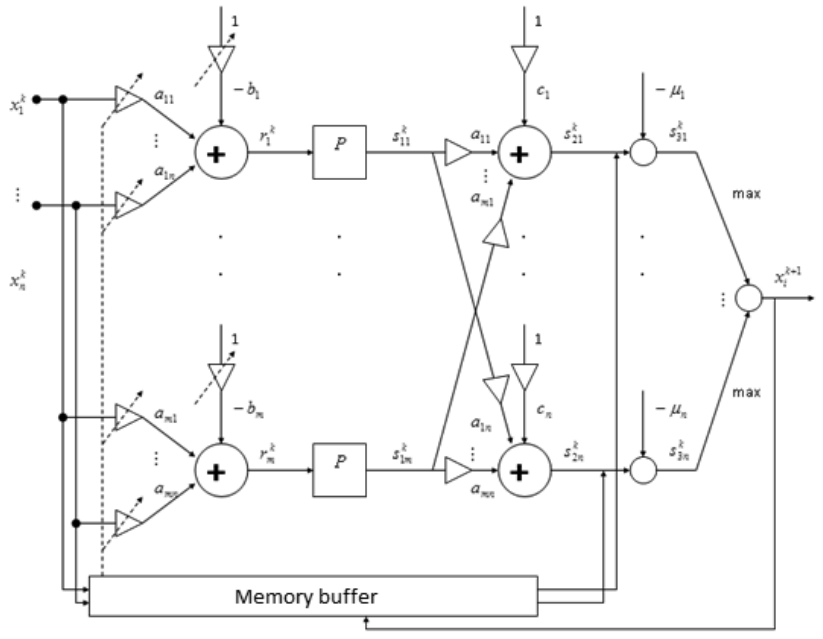


Figure 1. Model of artificial neural network for optimization of dynamic models of plant production

Source: own studies based on Kopeć (2004), p. 198.

An application of artificial neural network

In this section the obtained results of the application of ANN for optimization of the plant production are presented. Three optimization models, discussed in the previous section, were used for the calculation: serial, serial-parallel and parallel model.

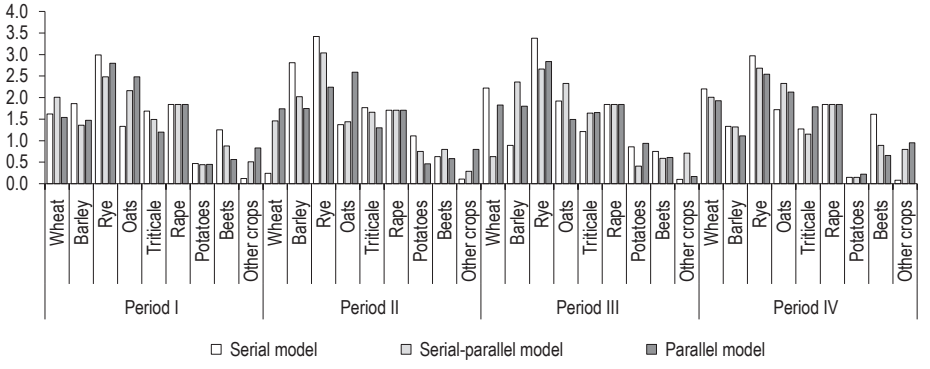


Figure 2. Sowing plan obtained with serial, serial-parallel and parallel models of dynamic optimization using artificial neural network (ha)

Source: own studies.

Figure 2 shows the sowing area of plants divided into sowing periods for serial, serial-parallel and parallel models. The results were obtained using an artificial neural network for optimization. The sowing areas for individual models differ in surface area. In each sowing period for the serial model, slight domination of one or two types of plants is visible. Rye dominates in the first period, in the second period barley and rye, whereas in the third and fourth period, wheat and rye. In the solutions for each model there are no zero sowing areas, each plant will be sown. This remark is important because in static models often the optimal sowing plan considers only one plant or several plants (not all plants are sown).

The detailed results of the optimization using the artificial neural network are presented in Table 1. The highest value of the objective function (agricultural income) was obtained for the serial model: PLN 92,269.88, for the serial-parallel model, the income amounted to PLN 90,861.65, and for the parallel model PLN 90,131.32.

Comparing the income values in individual sowing periods, the largest agricultural income values in each model were obtained in the first period, and the lowest in the II period. The value of the objective function obtained for periods III and IV are comparable and equals about PLN 23,000, Table 1.

Table 1. Plant production structures obtained with artificial neural network (ha)

Production period	Type of sowing	Sown area serial model	Sown area serial-parallel model	Sown area parallel model
1	2	3	4	5
Period I	wheat	1.62	2.01	1.54
	barley	1.86	1.36	1.47
	rye	2.99	2.48	2.80
	oats	1.33	2.16	2.48
	triticale	1.69	1.49	1.20
	rape	1.84	1.84	1.84
	potatoes	0.47	0.44	0.45
	beets	1.25	0.88	0.56
	other crops	0.12	0.51	0.83
Period II	wheat	0.24	1.46	1.74
	barley	2.81	2.02	1.75
	rye	3.42	3.04	2.24
	oats	1.37	1.44	2.59
	triticale	1.77	1.66	1.30
	rape	1.71	1.71	1.71
	potatoes	1.11	0.75	0.46
	beets	0.63	0.8	0.58
	other crops	0.11	0.29	0.80
Period III	wheat	2.22	0.63	1.83
	barley	0.89	2.36	1.80
	rye	3.38	2.66	2.84
	oats	1.92	2.33	1.49
	triticale	1.21	1.64	1.65
	rape	1.84	1.84	1.84
	potatoes	0.86	0.41	0.94
	beets	0.75	0.59	0.61
	other crops	0.10	0.71	0.17

1	2	3	4	5
	wheat	2.20	2.01	1.93
	barley	1.33	1.32	1.11
	rye	2.97	2.68	2.54
	oats	1.72	2.33	2.13
Period IV	triticale	1.27	1.15	1.79
	rape	1.84	1.84	1.84
	potatoes	0.15	0.15	0.22
	beets	1.61	0.89	0.66
	other crops	0.08	0.80	0.95
	period I	27,054.60	26,730.40	25,901.22
Agricultural	period II	17,644.52	18,814.09	18,005.01
income (PLN)	period III	23,748.80	22,389.57	23,374.87
	period IV	23,821.96	22,927.59	22,850.22
Agricultural income (PLN) – periods I–IV		92,269.88	90,861.65	90,131.32

Source: own studies.

Analyzing the obtained solutions using the artificial neural network, it can be concluded that when optimizing plant production models, the best results were obtained for the serial model, where the value of the objective function is the highest and equals PLN 92,269.88.

Conclusions

Presented in the paper approach for optimization of production models supports production and quality management. This optimization process can be used in many areas of management where the models with objective function are considered. In this paper for optimization of the dynamic linear models of plant production the artificial neural network (ANN) was used. The ANN has found a solution for three models: serial, serial-parallel and parallel. The optimization consisted in finding the maximum value of the objective function, which was agricultural income. The best result was obtained for the serial model, where the value of agricultural income was the highest. Dynamic models of plant production with constraint conditions take into account plant changes. These constraint conditions combine particular production periods. Static models do not have this property, each production period is optimized individually without taking into account the results of the previous period. In static models, crop rotation is not taken into account and in such models solutions focus on the production of one or several plants. In dynamic models, we get a solution that guarantees correct crop rotation. It should be emphasized once again that plant rotation is an important element for obtaining high yields and maintaining soil in good condition. In solutions obtained using artificial neural network, sowing does not concentrate on one plant but is evenly distributed, each of the plants will be sown.

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ZERO RATING: A CASE FOR NET NEUTRALITY

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ABSTRACT The article presents the phenomenon of net neutrality and its impact on the development of the global telecommunications network, the Internet. It indicates examples of approaches related to the introduction of the open network principle into the legal system and areas in which the implementation of this principle may face problems. The author characterised the zero rating phenomenon against the background of EU legal regulations and indicated its potential threats to the open Internet and entities operating in the online ecosystem.

Introduction

The global world, which is increasingly subject to integration processes, needs an efficient system that enables instant communication and access to information regardless of the physical location. The basis of this system is undoubtedly the Internet, which after only 28 years of operation has become the most important communication tool of the modern world.

Network infrastructure and related information and communication technologies are often referred to as a nervous system that enables functioning and at the same time has an impact on almost every aspect of human life. The impact of the Internet on social and economic relations is so great that it is considered one of the basic tools for growth and social development, and the physical and economic accessibility of the global network and its services are currently one of the criteria for dividing the world into poor and the rich.

The growing importance of the global network is reflected in the increasing number of strategies, recommendations and regulations related to cyberspace, aiming at the most effective use of its potential.

Published in May 2010, The Digital Agenda for Europe (DAE), a plan for the development of the ICT sector (information and communication technologies) by 2020, is one of the seven pillars of the Europe 2020 strategy and is a formal confirmation of the growing importance of digital technologies in the modern world.

The DAE's amplification is the Digital Single Market Strategy, adopted by the European Commission in May 2015, which aims to remove barriers to development and access to modern services based on information technology by creating a single digital market in the EU.

The adoption of the National Broadband Plan by the Council of Ministers in January 2014 was an exemplification of the transfer of the European assumptions to the Polish market was. The NBP is a strategic document defining the activities and measures necessary to achieve the goal of ensuring universal broadband Internet access throughout the territory of the Republic of Poland.

Net neutrality

Implementation of the assumptions adopted in the strategies and plans, however, requires not only to solve technical and financial problems related to the construction of infrastructure but also to define the legal framework and principles on which all interested parties (network operators, service providers, individual and institutional clients and government agencies and institutions) will use the network infrastructure.

One of the fundamental principles determining the efficient functioning of an extremely complicated environment such as cyberspace is the neutrality of the network. According to this principle, all Internet users can access the network infrastructure and resources on an equal basis. Thanks to the principle of neutrality, every entity, regardless of the role, size and area in which it operates, has equal rights in the online ecosystem in the provision and use of services, and each type of content (information) is sent on the same principles. From a technical point of view, neutrality means the freedom of movement between any points of the network, without the interference of operators and discrimination of this traffic regarding its origin (from where), destination (where to) and the type of data transmitted (EDRi, 2013, pp. 5–6). Openness and neutrality of the network are considered a key element contributing to the development of innovative services, competition and the free flow of information. Civil organizations also point to the fact that compliance with this principle has a huge impact on the creation of new measures conducive to the exercise of citizens' rights, in particular in the area of freedom of expression and the right to receive and provide information.

Despite many arguments for ensuring the principle of neutrality, for many years this concept functioned as a postulate rather than a legal regulation. The very approach to neutrality in different countries is also significantly different.

This is clearly seen in the example of regulations adopted in the US and EU countries. In the case of the USA, in February 2015, the Federal Communications Commission, which supervised the market, adopted regulations

that formally sanctioned the openness and neutrality of the Internet (FCC, 2015). However, in December 2017, the new FCC authorities repealed these regulations, supporting the arguments that the adopted provisions limit the freedom of ISPs in the provision of services and the use of business models (FCC, 2017). The new regulations enter into force on June 11, 2018 (Shepardson, 2018).

A completely different approach can be observed in European countries. In October 2015, the European Parliament adopted a package of telecommunication regulations, including the 2015/2120 (EU, 2015) regulation introducing legal protection for the openness of the Internet. In accordance with the provisions of the Regulation: „End-users shall have the right to access and distribute information and content, use and provide applications and services, and use terminal equipment of their choice, irrespective of the end-user's or provider's location or the location, origin or destination of the information, content, application or service, via their internet access service" – Article 3(1) and „Providers of internet access services shall treat all traffic equally, when providing internet access services, without discrimination, restriction or interference, and irrespective of the sender and receiver, the content accessed or distributed, the applications or services used or provided, or the terminal equipment used" – Article 3(3).

In addition, due to emerging doubts about the content of the regulation, the Body of European Regulators for Electronic Communications (BEREC) has issued Guidelines to the National Regulatory Authorities (NRAs) on the implementation of the new net neutrality (BEREC, 2016).

The guidelines clarify many issues and indicate possible deviations from the principle of neutrality as well as the conditions under which they may be applied. The exceptions indicated concern 3 areas where, for technical, legal or business reasons, the principle of network openness may be limited or even suspended:

a) provision of specialist (special) services, i.e. services other than internet access services which are optimised for specific content, applications or services, or a combination thereof, where the optimisation is necessary in order to meet requirements of the content, applications or services for a specific level of quality;
b) traffic management, i.e. actions aimed at protecting the security and integrity of the network and end-user devices, such as blocking spam or attacks of the Denial of Services type, and preventing network congestion. Permissible traffic management also consists in blocking services whose provision is incompatible with EU or national law (e.g. related to infringement of copyrights or publication of paedophile material);
c) implementation of specific business models and commercial practices of ISPs, however, with the provison that "Agreements between providers of internet access services and end-users on commercial and technical conditions and the characteristics of internet access services such as price, data volumes or speed, and any commercial practices conducted by providers of internet access services, shall not limit the exercise of the rights of end-users laid down in Article 3(1)".

Zero rating offers

From the point of view of NRAs, which were required to monitor and enforce the principles of an open and neutral internet, particularly interesting and also difficult seem to be problems concerning the third group of exemptions. An example is the transfer limits (data cap) used in ISPs offers, where after the limit has been exhausted, the operator reduces the transmission speed or charges higher fees (or requires the purchase of an additional package). Such solutions do not raise any doubts as long as the restrictions apply equally to all services

used by end-users. Problems arise, however, when the ISP, wanting to increase the attractiveness of its offer, introduces services that are excluded from the limits set for users. Such solutions are mainly introduced by mobile operators BEREC, 2012), and because the traffic generated by the user for these services or content is handled by the ISP without additional payment, such offers are referred to as zero rating.

From the information presented in Report on the implementation of Regulation (EU) 2015/2120 and BEREC Net Neutrality Guidelines (BEREC, 2017), it appears that regulatory authorities confirmed the use of zero-rating offers regarding one or more types of content or services in as many as 25 out of 30 countries (28 EU countries and Norway and Iceland).

In practice, there may be many variants of zero rating offers, and the basis for their distinction is, among others:

1. Paid or free inclusion of a given service or content in a zero rating offer. An ISP may offer unlimited access to specific content to customers without charging a fee from their provider or make the inclusion of content in a zero rating offer subject to a fee paid by the provider (Eisenach, 2015, p. 2).
2. Commercial or non-commercial purpose of the business. The types of zero rating offer may depend on whether the content covered by them is made available by the content provider for profit (e.g. commercial VOD service) or non-profit (Wikipedia). However, the problem may be precisely defining the commercial nature of the service if its provider derives profits indirectly, e.g. from displayed advertisements, from collected and shared for a fee information about end-users or from additional paid services recommended by the provider.
3. Guaranteeing exclusivity. Exclusivity can occur in 2 variants. First of all, it may refer to offering the internet content of a specific provider on a zero-rating basis only by one ISP. In agreements of this type, the content provider usually receives payments from an ISP. In the second option, exclusivity may consist in the ISP's commitment not to conclude zero-rating agreements with competitors of the entity offering specific internet content. In this case, it is usually the content provider that pays to the ISP.
4. Type of content. The zero rating offer may apply to a specific provider or a whole specific category of web content (e.g., any type of music streaming). In practice, providing end users with unlimited access to specific content is complicated and extremely rare for technical and organizational reasons. In the case of the Music Freedom (music streaming), the service offered in the USA by the T-mobile, despite the operator's declaration that access to the service is open to all content providers, in practice – due to technical conditions, among other things – only 40 out of 2000 legally operating online music providers in the USA use it (van Schewick, 2016, p. 18).
5. The durability of agreement between the content provider and the ISP. Such an agreement may be permanent or transitory. In the latter case, the agreement is concluded for a strictly defined time and applies, for example, during the promotion period (IGF, 2014).
6. Other detailed conditions, such as the provisions of the regulations for the provision of services to end users. An example is the determination by the ISP of the conditions under which it is possible to use an unlimited access to the content of the service or application after the data limit has been reached.

The assessment of the impact of zero rating offers on the openness of the Internet and the admissibility of their use is difficult not only due to the multitude of variants in which they are implemented by the ISP. The problem is

also the fact that the effects it causes for content providers, ISPs and end users are ambiguous and often assessed in an extreme way.

It seems that it is ISPs that benefit most from applying zero rating offers. This thesis is confirmed by the previously mentioned popularity of such offers in Europe (Berec, 2017, pp. 7–10). Supporters of the zero-rating stress that it can positively affect competition between ISPs, allowing them to differentiate the offer and specialize in providing services of a certain type (Peng, Preta, 2015, p. 7). Therefore, it positively influences the process of building a competitive ISPs market.

For users, the zero rating offer may be a remedy for low data limits, particularly severe in countries with poorly developed mobile infrastructure (developing countries). On the other hand, the effect of the development of zero-rating offers, i.e. the privileged treatment of selected content, services or applications, may be a deterioration of the position of suppliers whose content is not available in unlimited packages. In the opinion of Tim Berners-Lee, one of the creators of technology enabling the functioning of the Internet, net neutrality is not only harmed by blocking and slowing down access to specific content, services or applications, but also by the so-called positive discrimination, such as when an ISP favours one of the content providers (Berners-Lee, 2015). Similar conclusions, indicating that favouring the selected content by the ISP may harm competition and innovation among its suppliers, result from consultations regarding open internet, conducted by the European Commission (UE, 2010, p. 2).

The zero rating offers have the largest impact on the market situation in the area of content providers. In relation to large entities offering popular services and content or new players who can afford to pay fees enabling the introduction of content to unlimited offers of mobile operators, the use of zero rating will undoubtedly foster the strengthening of the market position. However, for new players, providers of content targeted at small groups of recipients or local (national or regional) markets, the technical or financial requirements of zero-rating may lead to deterioration. The consequence will be the systematic strengthening of the position of large players while weakening small and new, leading to the monopolization of the market.

The use of zero-rating for services or content provided on non-commercial terms seems to be the least controversial. As part of the Wikipedia Zero project, agreements between Wikimedia Foundation Inc. and ISPs are concluded without remuneration and with no reservations as to exclusivity. The sites offered in this way do not display ads, and the foundation itself is maintained with donations. The social benefits associated with the creation and sharing of knowledge resources on special terms encourage recognition of the admissibility of such exceptions.

Despite the fact that in strictly defined situations (content made available non-commercially, temporary agreements) zero-rating may not cause negative effects or may have positive effects for selected groups, the majority of arguments suggest that in the long term and with regard to the entire telecommunications market the negative effects will prevail. It is also worth emphasizing that the negative effects associated with the zero-rating are hardly noticeable by end users. This is confirmed by the analyzes carried out by BEREC, according to which, when choosing variants of services offered by the ISP, consumers do not take into account long-term effects relating to innovation and competition. Therefore, these values should be protected by the regulator (BEREC, 2015, p. 20). A similar objective was formulated in the general assumptions to Regulation 2015/2120, where it was pointed out that “This Regulation aims to establish common rules to safeguard equal and non-discriminatory treatment of traffic in the provision of internet access services and related end-users’ rights. It aims to protect end-users and simultaneously to guarantee the continued functioning of the internet ecosystem as an engine of innovation”.

Conclusions

Net neutrality and open and unrestricted access are the rules that have been connected to the Internet since its inception. The need to maintain these principles and cover them with legal protection was repeatedly mentioned in their public statements by Vinton Cerf, considered one of the "fathers" of the Internet, co-creator of the TCP/IP protocol, Tim Berners-Lee, creator and one of the pioneers of the WWW service, Viviane Reding, Vice-President of the European Commission, and Neelie Kroes, Vice-President of the European Commission and European Commissioner for the Digital Agenda.

Introduced by virtue of Regulation (EU) 2015/2120 of The European Parliament and of The Council as well as BEREC Guidelines on the Implementation of the National Net Neutrality Rules, regulations and recommendations sanctioned the legal protection of these principles in EU countries. However, as the internet ecosystem is currently an extremely complex mechanism both from the technical and organizational side, the regulations introduced will certainly not be able to solve all problems related to the non-observance or circumvention of the network neutrality principles by ISPs. Already the growing popularity of zero rating offers, their various variants and possible combinations introduced by ISPs are a challenge and a problem from the point of view of their impact assessment. NRAs which in the light of adopted regulations have gained competence to evaluate ISPs activities, including the use of zero rating offers in terms of compliance with the principles of open internet access and net neutrality must develop precise and non-discriminatory principles that will form the basis for possible intervention in the market. Since no comprehensive studies to assess the impact of zero-rating on competition among content, service and application providers have been conducted so far (Adams, Stallman, 2016, p. 24), defining the areas and rules for NRAs requires further research and analysis at EU and national markets level.

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ACADEMIC ENTREPRENEURSHIP – THE ROLE OF ACADEMIC BUSINESS INCUBATORS IN POLAND

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ABSTRACT

Developing relations between academic community and business environment is crucial for creating knowledge needed for the economy. Academic Business Incubators perform this function making better use of the potential of universities and transferring research results to the economy. The main aim of this research article is to present the role of Academic Business Incubators operating in Poland. The research methodology is an analysis of the literature of the subject in the field of academic entrepreneurship and analysis of existing data and documentation on the practical aspects of the Academic Business Incubators in Poland. The research shows that vast majority of incubators focus on cooperation only with local institutions. The cooperation with foreign scientific and business units may contribute to development of innovation projects. Also, supporting the development of Academic Business Incubators by Higher Education Institutions may be an important factor for students as it increases the attractiveness of studying at a given institution.

Introduction

Institutions operating on the higher education service market are facing an increasing need to develop entrepreneurship attitude among their students. Nowadays, it is necessary for Higher Education Institutions to promote entrepreneurship and to activate students in this area. The integration of business and science is crucial for the further rapid development of economies of a country. Such integration can occur as cooperation in the form

of education, consulting and training, research and development activities or organizing internships for students. The article presents academic entrepreneurship with the great attention to the Academic Business Incubators (ABIs) operating in Poland.

In accordance with the aim of this article, only ABIs regulated by The Act on Higher Education were taken into consideration.

Literature review

Higher Education Institutions (HEIs), including universities, have a huge impact on achieving national economic and social goals through building intellectual and social capital in the country. Higher education carries out two main functions: education and research, affecting the attitudes of individuals and society as a whole. The mission of higher education in Poland is to improve the quality of life of Polish citizens by creating, expanding and disseminating knowledge, developing their skills for individual and general use, and increasing the quality of public services (Ernst & Young Business Advisory, 2009, p. 3). In addition to it, the mission covers also creating links between the national academic community and the global academic and intellectual community, as well as national and foreign companies and public institutions.

The cooperation between HEIs is specified in the initial part of the Act on Higher Education. HEIs shall co-operate with the socio-economic environment, in particular by conducting research and development for business entities on the basis of organizationally and financially independent economic structures, including the establishment of a special purpose vehicle (SPV), referred to in Article 86a, as well as through the involvement of employers' representatives in the development of study programmes and teaching processes (The Act on Higher Education of 27 July 2005, art. 4, point 4).

With a view to fostering the optimal use of the intellectual and technological potential of HEIs and the transfer of research findings to the economy, higher education institutions may establish academic business incubators and technology transfer centers (The Act on Higher Education of 27 July 2005, art. 86, point 1). An academic business incubator shall be established with the aim of supporting the economic activity of the academic community or staff and students of a higher education institution (The Act on Higher Education of 27 July 2005, art. 86, point 2).

Academic entrepreneurship regards the entrepreneurship of students, doctoral students, as well as academic staff and administrative staff. A channel for knowledge transfer and innovation is the establishment of enterprises by university staff, its students, and doctoral students, in or near the university. On the other hand, a HEI is an organization that also should be well organized and managed. In the didactic process it educates future staff for the economy, administration, science, culture and art. In the field of research activities, the institution collects data with the purpose of creation new knowledge and innovation.

Nowadays, more and more universities take orientation towards entrepreneurship. HEIs want to increase their competitiveness and strengthen their position through:

- increasing the attractiveness of its educational offer,
- applying for funds from the EU (grants for research and cooperation with other entities),
- intensifying cooperation with entrepreneurs in the field of internships for students and conducting joint research.

An entrepreneurial higher education institution is one that seeks to achieve a strong international competitive position on the educational and research market, benefits from the commercialization of its research activities and works for the environment (Pluta-Olearnik, 2009, p. 21).

The European Commission conducted the research on innovative industry with a great attention to creating new innovative companies in European Union (EU) countries (European Commission, 2002). According to the results, the main factors that hamper the creation of new firms were pointed: poor entrepreneurial culture (two-thirds of respondents) and the lack of training in entrepreneurial skills prevents people starting up a business (confess nearly half of respondents). This implies a great need for development an educational offer to support entrepreneurship among young people. European universities' management board is aware of importance of the technology transfer, not only because of the additional revenue but also because of creation an image of academics who support entrepreneurship and run their own business.

The European Commission (2002) state key factors that should appear to contribute most strongly to entrepreneurial success:

- fostering awareness of entrepreneurship among researchers and professors,
- availability of seed capital funds at the institutions' disposal,
- having the use of physical infrastructures such as a business incubator,
- possessing the resources to assess the capability of technical ideas to move to market,
- actively networking with investors, CEOs and business schools.

Strengthening cooperation between HEIs and business entities is one of the key elements of economic policies in the individual EU countries.

The concept of academic entrepreneurship is often understood as the creation of technology companies, so called spin-off (formal relationship with its home university which usually paid some contribution for development of new company) and spin-out (lack of formal relationships with its home university; usually does not use the university's contribution, except for intellectual property, as a result of the scientific work of its university staff) by academics.

Banerski et al. (2009, pp. 29–38) emphasize that for further expand of higher education market and the whole economy of Poland it is essential to:

a) transform the HEIs educational offer towards entrepreneurship, innovation, and commercialization of technology;
b) effective teaching and promotion of academic entrepreneurship dependent on professional training programs adapted to national legal, economic and institutional conditions;
c) intensify cooperation between HEIs and academics with the business community;
d) develop infrastructure for academic entrepreneurship, including institutions and programs, preparation of management teams and services for starting new companies;
e) introduce clear rules for the management of intellectual property.

The development of institutions supporting entrepreneurship is necessary for the construction of the whole ecosystem of innovation and knowledge transfer.

Method

The research methodology is an analysis of the literature of the subject in the field of academic entrepreneurship as well as analysis of existing data and documentation on the practical aspects of Business Support Institutions (for example Academic Business Incubators) in Poland. The desk research method mainly concerned quantitative data.

Results

Business Support Institutions occupy a crucial role in the field of technology transfer and knowledge commercialization – developing the innovative character of Polish economy. Centers for innovation and entrepreneurship (as one of Business Support Institutions) have become an important stimulator for supporting the development of entrepreneurship and modern economy. First centers were established in Poland in the late 1990s. There are many organizations within the framework of Polish system of Business Support Institutions. Bąkowski, Mażewska (2015, p. 8) distinguish three main types due to the area of activity and scope of given support:

1. Entrepreneurship Centers – exemplary institutions: training and business consulting centers, pre-incubators, business incubators.
2. Innovation Centers – technology parks, science and technology parks, technology incubators, technology transfer centers, academic business incubators, innovation centers.
3. Financial institutions – regional and local loan funds, credit guarantee funds, seed capital funds, business angel networks.

Entrepreneurship Centers are mainly focused on promotion and incubation of entrepreneurship, providing business services especially for micro and small enterprises to stimulate the development of peripheral regions or those affected by the structural crisis.

Task for Innovation Centers is directly related to promotion and incubation of innovative entrepreneurship, technology transfer and providing pro-innovation services, activating academic entrepreneurship and cooperation between science and business.

The third group of institutions is aimed at facilitating access to finance for new businesses and small businesses without credit history, providing financial services tailored to the specific nature of innovative business activities.

According to the research carried out by Polish Business and Innovation Centers Association in Poland (2015, p. 11), there are 681 active centers for innovation and entrepreneurship. The following types of centers can be marked:

- 42 technology parks,
- 24 technology incubators,
- 24 academic business incubators,
- 42 technology transfer centers,
- 47 innovation centers,
- 103 capital funds,
- 81 local and regional loan funds,
- 58 credit guarantee funds,
- 7 business angels,
- 207 training and advisory centers,
- 46 business incubators.

Figure 1 presents the growth of centers of innovation and entrepreneurship in Poland in a given time schedule.

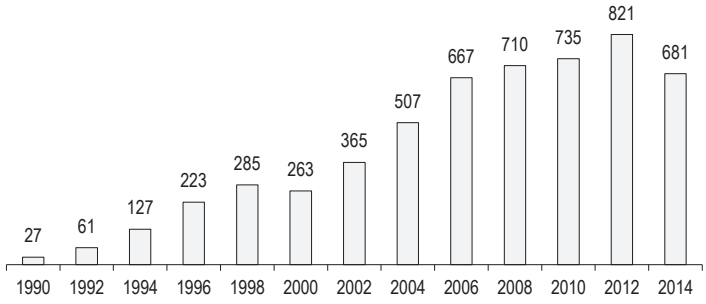


Figure 1. Dynamics of development of centers of innovation and entrepreneurship in Poland between 1990 and 2014

Source: own elaboration based on the data presented in the report by Polish Business and Innovation Centers Association in Poland – Bąkowski, Mażewska (2015), p. 11.

Access to EU funds has made it possible to implement a number of large infrastructure projects that create and develop centers for innovation and entrepreneurship in Poland (a significant increase in the number of centers since 2004).

Business Incubators are one of type of institutions providing services for supporting and developing entrepreneurship in Poland. The incubators may belong to Entrepreneurship Centers and to Innovation Centers as it depends on the form of support and the range of offered services. They are defined as organizational and real-estate based centers for entrepreneurship with the main aim at supporting the development of small businesses (including startups), by offering accommodation and needed business support. The basic task of such incubator is to assist in the creation process and help the company in the early stage of development. Business incubators may offer low rent rates, business training, advisory and information services, as well as access to common technical and service infrastructure (Guliński, Zasiadły, 2005, p. 29).

Academic Business Incubator (ABI) is a specific type of incubator, which is usually located in the nearby of university or other HEI's environment. ABI is a part of entrepreneurial higher education institution. The main aim of such incubator is to support students and academics in practical market operations. In addition to usual incubators functions, ABIs carry out a number of specific activities oriented towards entrepreneurship education and commercialization of new products (services) and technologies resulting from research and development activities. Guliński and Zasiadły (2005, p. 29) state that such incubator offers opportunities for development through:

- access to university laboratories and research apparatus,
- technological and patent consultancy,
- direct use of the knowledge of researchers and students in the provision of advisory and training services,
- access to databases of researchers and inventors, ideas, patents and technologies.

The efficiency of an ABI depends on the set of competencies representing the advisory team in the incubator (responsible for training and advisory services) as well as management board (defining the strategic direction for an incubator).

First ABI in Poland was established in 1998 at the University of Warsaw. Nowadays, there are 80 business incubators altogether in Poland. In the report of Centers for innovation and entrepreneurship (Bąkowski, Mażewska, 2015, p. 56), authors differ three types of ABIs:

1. Academic Business Incubators established by HEIs.
2. Academic incubators operating within the technology parks and other Business Support Institutions.
3. The network of Academic Business Incubators operated by Academic Foundation Business Incubators (the most numerous group).

For the purpose of this article (academic entrepreneurship) only ABIs regulated by The Act on Higher Education of 27 July 2005 (founded by HEIs and those operating within the technology parks and other Business Support Institutions) were taken into consideration. Business incubators operated under the network were not discussed in this article because these incubators are subject to a foundation (a separate entity developing incubators within the network) and they are not regulated by the Act.

In accordance with the Act, an Academic Business Incubators may be established in the form of (The Act on Higher Education of 27 July 2005, art. 86, point 3):

1. Unit at the institutional level, shall operate on the basis of regulations to be approved by the senate of the higher education institution.
2. Business entity or a foundation, shall operate on the basis of the relevant documents regulating its status.

There are opportunities for the development of university-based entrepreneurial infrastructure and technology transfer, with the free choice the organizational and legal form that is appropriate to the needs of the HEI. The Law also allows university and graduate students to combine academic work and study with entrepreneurial status, and an ABI is created to support such activity. It can operate as an administrative department of the university or separately from the university, having legal personality, acting in the form of a commercial law company, association or foundation. The organizational forms of Academic Business Incubators are presented in the Figure 2.

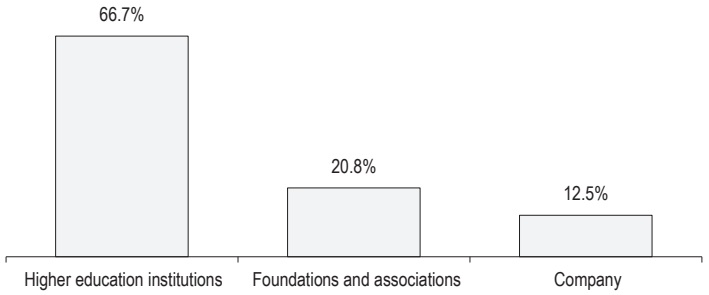


Figure 2. Academic Business Incubators in relation to organizational form in Poland in 2014

Source: own elaboration based on the data presented in the report by Polish Business and Innovation Centers Association in Poland – Bąkowski, Mażewska (2015), p. 58.

The largest group of ABI operates as a unit of higher education institutions (66.7%). These units are directly subordinate to the rector or vice rector. One of advantages of such subordination is relatively smooth flow of information between an ABI and the management board. On the other hand, lack of independence in decision-

making process causes the whole process to be lengthened. ABIs operating under HEIs are organizationally separated but not by budget. This can create some difficulties with their effective resources management.

The activity of academic entrepreneurship incubators is usually initiated by the academic community. The main function of ABIs is exploitation and commercialization of knowledge through spin-off companies, including the promotion of entrepreneurship among students and graduates leading to their economic activity (Bąkowski, Mażewska, 2015, p. 59). Young entrepreneurs often face lack of experience (knowledge) and funds needed for establishing and running a business from the very beginning. ABIs are intended to assist in the preparation of a business by analyzing and determining the market potential of a business idea as well as supporting a person to conduct an independent business, assessing the protection of intellectual property and developing commercialization strategies, evaluating the technical feasibility of the project, market demand and developing a business plan.

A statistical ABI is 266.5 m^2 in floor area. The ABIs usually have a combination of infrastructure consisting of: office space, conference rooms, consultation rooms, and exposition space. In addition 40% of ABI have "open space" floor for rent at their disposal. When it comes to human resources, the average ABI employs 6.1 persons. The majority of incubators (80%) employs from 1 to 4 persons. Employees of 60% of ABIs focus exclusively on its operations, while others divide their work with other activities. Some of employees have to devote about half of their time to the business incubator, and 50% to other activities within the HEI. The average annual operational budget of ABI ranges between EUR 11,904.76 to EUR 119,047.62). The main source of income are donations/subventions from managing institution (38.1% of total income), grants and projects (20.8%) and revenues from space rent (18%) and registration and exploitation fees (14.1%) (Bąkowski, Mażewska, 2015, p. 61).

The structure of an ABI clients is presented in the Figure 3. The data shown below regards the structure in 2013.

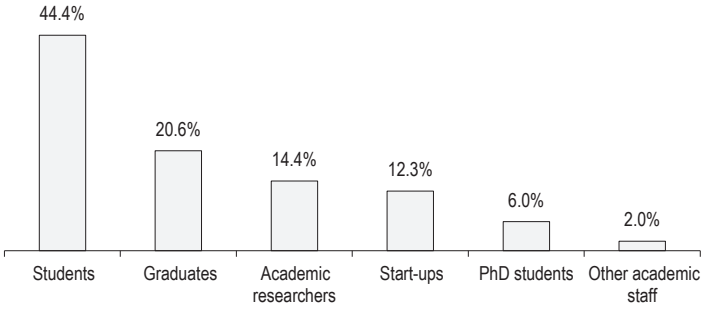


Figure 3. The structure of ABI clients

Source: own elaboration based on the data presented in the report by Polish Business and Innovation Centers Association in Poland – Bąkowski, Mażewska (2015), p. 66.

The great majority of clients are students and graduates. It is a good result due to the fact that ABIs perform their statutory tasks in the area of education and promotion of entrepreneurship and support for commercialization of new products and technologies among students.

The idea of supporting academic entrepreneurship implies that they are actively involved in educational processes using the following tools:

- promotional actions related to entrepreneurial activities,
- university business contests among students, doctoral students and young academics,
- organization of training and counseling for potential academic entrepreneurs,
- creation and development of academic centers of creativity,
- creating a wide network of external contacts with risk investors, alumni associations, others business support institutions.

The research shows that vast majority of ABIs provide their clients with consulting services in the field of: business planning, forming a company, as well as business management, and legal, financial and tax issues. They also organize training courses in market analysis and marketing. An average ABI runs 14 training courses, attended by 168 people in total. The range of consulting services was diverse. Some of the respondents organized 600 or even 782 advisory meetings (annually), while others set up only two (Bąkowski, Mażewska, 2015, p. 67). Every incubator collaborates with local companies, some of them with universities (80% of ABIs) and with Business Support Institutions (70%). Encouraging and supporting students to carry out joint market research for an ABI can be a good first step for students to start thinking about their own business.

For universities it is significant to cooperate and support ABIs as more and more students are willing to start their own business. Hence, the service performs by Academic Business Incubators established by universities may be a decisive factor for young people to take up studying at a given university.

Discussion

Academic entrepreneurship based on innovation is an important factor of the innovation policy of each country. It is worth to develop Academic Business Incubators to combine technical, entrepreneurial and business management skills to enable students start their own business. A long-term strategy of Higher Education Institutions of developing such incubators should be introduced to properly managed business activity of academics and students. Reorientation of universities to cooperate with the business community is a long-term process, requiring the change in the mentality of the academic community and relevant internal regulations. Transfer of knowledge from studies to business will be more efficient when support is provided from the national level (Siemieniuk, 2016, p. 155). By introducing appropriate support tools commercialization of academic knowledge will be possible on a broader scale. Direct financial support, technology transfer, business contacts and also suitable infrastructure are those factors which significantly affect the efficient cooperation between business entities and universities.

Conclusions

Majority of ABIs focus on cooperation with local institutions. It is important for ABIs to widen the relations with some international entities, as concentration only on local organizations creates relatively weak conditions for development of innovation projects. Cooperation with others abroad and taking advantage of their experiences is crucial to improve ABIs offer (Bojar, Ratajczak, 2012, p. 25).

By engaging academics to enhance collaboration with business, ABI may also expand the range of services and support. Using the knowledge and experience of academics and entrepreneurs (mentors) cooperating with ABIs may help to create a very good infrastructure for the quick testing of business ideas in safe conditions.

In spite of many difficulties and challenges, offering by ABIs professional support for students starting their own business seems to be important task as the main role of ABIs is to accelerate transfer of entrepreneurial knowledge to the business world. Nowadays, more and more students start to think about their own business when they study. The development of Academic Business Incubators established by universities (and other Higher Education Institutions) may be one of important step to attract students to a given university.

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EUROPEAN UNION FUNDS IN IT DEPLOYMENT FOR THE POLISH TAX ADMINISTRATION

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ABSTRACT The purpose of the article is to define the scope of IT solutions implementation for the Polish tax administration and the level of involvement of European Union funds in this process. The considerations begin an analysis of the strategic European Union documents determining the directions of spending European Union funds under the multiannual financial framework for 2014–2020. As demonstrated by the analysis, extensive support of information technology constantly implemented under the national tax administration involves significant costs. They are only partly covered by the State Treasury, and in the dominant scope they are financed from European Union funds. It can be assumed that without significant European Union funding, the implementation of these projects would not be possible. Their implementation is, however, necessary, as it determines the efficient and effective operation of the tax administration.

Introduction

In recent years, tax administration in Poland has undergone a number of transformations of organizational and functional nature, aimed at increasing the efficiency and effectiveness of its operations. One of the areas of these changes is the IT implementation of these services, which is part of the integrated activities aimed at improving the functioning of public administration and, consequently, the functioning of the state. The use of modern information

tools and techniques, including tax administration, also contributes to the pursuit of sustainable state development. The purpose of the article is therefore to define the scope of IT deployment for the Polish tax administration and the degree of involvement of European Union (EU) funds in this process.

IT implementation for public administration in Poland and the European Union

The EU needs to enhance the efficiency of public expenditure, and find new, untapped sources of growth and employment. Modernising of public administrations is a way to relieve economic and budgetary pressures, to design and deliver needed structural reforms, to remove existing barriers in the Single Market, to foster innovation and create new job opportunities (European Commission, 2016). The key element of this modernization is implementation of IT solutions, because the civilization breakthrough is associated with changes occurring in society, aimed at increasing the level of computerization of society (Ziemba, 2013, p. 401).

In the Europe 2020 strategy adopted by the European Commission on 3 March 2010 under the seven flagship initiatives, a Digital Agenda for Europe was highlighted. It is a project for popularizing high-speed Internet and enabling households and enterprises to take advantage of the digital single market (European Commission, 2010). The Europe 2020 strategy together with its seven flagship initiatives is a reference for co-financing all projects on both the "domestic" and "community" sides in the financial framework for 2014–2020.

In 2015, the European Commission published a new key European strategy, which is the Digital Single Market (European Commission, 2015). The strategy sets out initiatives to make the European Union a digitally integrated economic area capable of competing on the global digital market. One of the highlighted initiatives is e-administration. Electronic public services are an important factor increasing not only the cost-effectiveness, but also the quality of services provided to citizens and enterprises. One example of increased efficiency is the "once only" principle. The public administrations in the EU reuse information about the citizen or companies that is already in their possession without asking again only in 48% of cases. The extension of this principle, in compliance with data protection legislation, would generate an annual net saving at the EU level of around EUR 5 billion per year (European Commission, 2015).

Actions taken in Poland in the area of public administration meet the objectives set at the European level. The availability, scope and quality of electronic public administration services is gradually increasing. Although the level of development of e-government in Poland is gradually increasing, it still belongs to the lower in the European Union. According to the data of the UN E-Government Survey 2016, the E-Government Development Index[1] in 2016 amounted to 0.721 for Poland (compared to 0.644 in 2012 and 0.558 in 2010) and it placed our country on the 36th position out of 193 surveyed countries, while in the EU it located our country on the 18th position (promotion by 6 positions compared to 2012) (the index level for the best rated in the EU of Great Britain was 0.919) (United Nations, 2016). In turn, according to Eurostat (2017) for 2016, less than every third Poles (30%) used Internet to interact with public authorities. For comparison, in the entire European Union almost half (48%) of EU citizens use e-government, and in Denmark, Finland and Sweden about or over 80% (Table 1).

[1] The measurement of the E-Government Development Index is the effect of a weighted average of several scales corresponding to the main dimensions of e-government: 1) the scope and quality of online services; 2) the level of use of the telecommunications infrastructure; 3) the level of human capital.

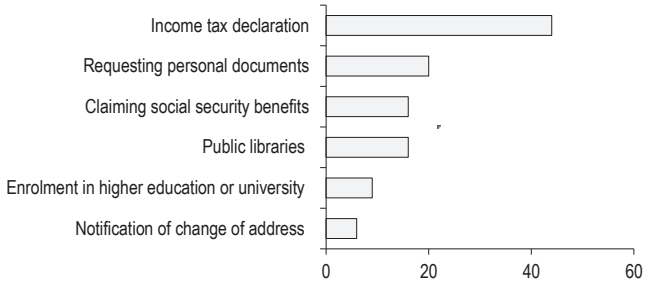
Table 1. Internet use in contacts with public administration, EU, Iceland, Norway and Switzerland, 2008–2016 (% of all individuals)

State	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016–2008 (percentage points)
EU-28	35	37	41	41	44	41	47	46	48	13
EU-15	38	42	45	44	47	47	51	51	53	15
Euro area	37	39	43	44	46	46	50	50	52	15
Latvia	20	30	40	41	47	35	54	52	69	49
Estonia	37	46	50	53	54	48	51	81	77	40
Denmark	49	73	78	81	83	85	84	88	88	39
Greece	13	14	16	27	34	36	45	46	49	36
Belgium	26	41	45	47	50	50	55	52	55	29
Portugal	19	21	26	37	39	38	41	43	45	26
Lithuania	22	22	24	29	36	34	41	44	45	23
Croatia	16	17	19	17	26	25	32	35	36	20
Cyprus	18	24	25	29	30	30	41	34	38	20
Hungary	28	30	34	38	42	37	49	42	48	20
Finland	62	64	68	68	70	69	80	79	82	20
Spain	31	34	38	38	44	44	49	49	50	19
Malta	25	34	37	37	41	32	40	42	44	19
Sweden	59	65	68	74	78	78	81	73	78	19
Ireland	34	37	37	44	49	45	51	50	52	18
France	48	47	57	57	61	60	64	63	66	18
Czech Republic	19	26	23	42	30	29	37	32	36	17
Luxembourg	60	66	67	60	61	56	67	70	76	16
Netherlands	61	61	64	62	67	79	75	75	76	15
United Kingdom	40	48	48	40	43	41	51	49	53	13
Norway	72	74	76	78	78	76	82	81	85	13
Germany	44	48	50	50	51	49	53	53	55	11
Slovenia	35	35	44	46	48	52	53	45	45	10
Bulgaria	10	11	24	25	27	23	21	18	19	9
Austria	51	49	51	51	53	54	59	57	60	9
Poland	22	25	28	28	32	23	27	27	30	8
Slovakia	40	38	50	48	42	33	57	51	48	8
Italy	20	21	23	22	19	21	23	24	24	4
Romania	:	7	8	7	31	5	10	11	9	:
Iceland	74	80	82	84	86	81	85	:	:	:
Switzerland	:	:	:	:	:	:	71	:	:	:

States ranked by the largest increase in the part of the society using the Internet in contacts with public administration.

Source: Eurostat (2017).

Looking at the reasons for using e-government websites (Figure 1), 44% of e-government users in the EU reported declaration of income tax, followed by requesting personal documents (e.g. passport, ID card or driver's licence) or certificates of birth, marriage or death (20%), claims for social security benefits (16%), searching public libraries (16%), enrolment in higher education or university (9%) and notification of change of address (6%).



Note: EU-28 without Croatia.

Figure 1. Reasons for using e-government websites, EU-28, 2013 (% of e-government users)

Source: own work based on Eurostat (2013).

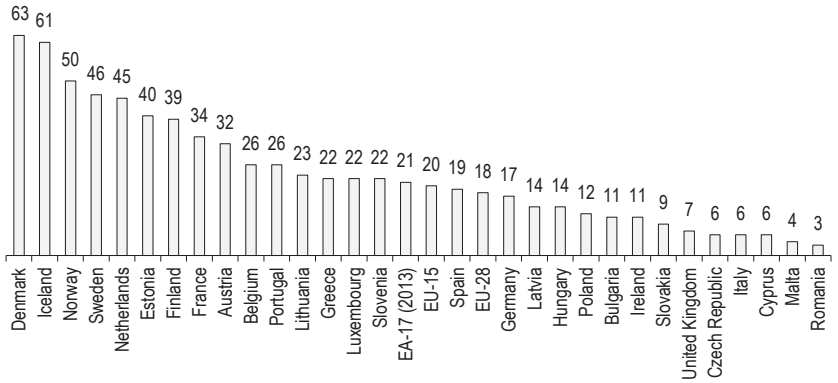


Figure 2. Individuals submitting income tax declaration via websites of public authorities, EU, Iceland and Norway, 2013 (% of all individuals)

Source: own work based on Eurostat (2017).

In 2013 (unfortunately, Eurostat does not publish later data) in Poland, only 12% of taxpayers filed an income tax declaration via websites of public authorities. For comparison, there were over 60% of such taxpayers in Denmark and Iceland. It is worth emphasizing, that in Poland the interest in electronic declarations is growing very fast and in 2017 the number of electronic income tax declarations exceeded 50% of all submitted declarations.

Poland has been computerizing intensively for nearly a decade. In the previous EU financial perspective (2007–2013), about PLN 4 billion was spent on this purpose. Funds for computerization, however, were spent irrational and inefficient, and the law was not conducive to the effective use of IT systems. According to the diagnosis presented in the "Efficient State 2020" strategy, apart from the attempt to integrate electronic services into ePUAP, there is a lack of universal platform to integrate IT systems. Domain systems dominate, operating in separation from others. The low level of interoperability is a key problem to be solved (*Efficient State Strategy 2020*, p. 14). The current errors of IT implementation include: (Ministerstwo Cyfryzacji, 2016, pp. 10–22):

- state information resources are closed to citizens,
- the data collected is not reused,
- the same information is collected in parallel and reproduced,
- systems and registers are not interoperable and compatible,
- the same problems are solved with the help of various tools,
- IT resource management is scattered and decentralized, and thus uncoordinated,
- lack of sufficient competence on the part of administration in the scope of ordering, designing, building IT systems and their maintenance causes delays in implementation, low quality and may cause unreasonable costs for the state; this applies to cooperation with both external and internal suppliers,
- lack of uniform standards and guidelines for the development, maintenance and implementation of ICT projects and cyclical controls,
- lack of effective cooperation of public administration with the private sector,
- lack of state (group, common for part of administration) rules of running IT projects and a leader responsible for coordinating these works.

The problem is also the lack of confidence of Poles in this form of dealing with matters. To increase the popularity of using e-services offered in offices, public administration (the Minister of Digitization and local government bodies) should undertake large-scale information and promotion activities in this area (NIK, 2016).

The Integrated State Informatisation Program (ISIP), which was updated in October 2016, describes the government's efforts to provide high quality public electronic services. The aim of the program is to create a coherent, logical and efficient state information system, effectively providing e-services at the national and European level in terms of quality and costs. The program will ensure cooperation between existing and new ICT systems of public administration, eliminating at the same time duplicate functionalities. Fulfilling the ISIP objectives will be measured by the percentage of citizens and entrepreneurs using e-services of public administration and the level of user satisfaction.

The main source of financing the construction of systems ensuring access to key public administration e-services identified in ISIP will be the Operational Programme Digital Poland (OP DP). Supplementary sources, if possible, will be OP Knowledge, Education and Development, the Connecting Europe Facility, a program for interoperability solutions for European public administrations (ISA) and the Horizon 2020 program.

It is expected that public (national and EU) funds under the second axis of the OP DP will be about EUR 1.1 billion, and public (national and EU) funds involved at the regional level – about EUR 1.8 billion. The difference between the expenditures necessary for the implementation of ISIP and the funds provided for the implementation of OP DP and regional programs will be covered from the budgets of the ministries and budgets of local government units (Ministerstwo Cyfryzacji, 2016, pp. 10–22).

IT implementation for the tax administration in Poland

Table 2 presents the characteristics, including the scale of co-financing from EU funds, the largest e-projects for the Polish tax administration.

A huge e-project is also the Platform of Electronic Tax and Custom Services (PETCS), which is a continuation of the Electronic Services Platform of the Customs Service launched in 2015. Further modernization of this program is planned. In August 2017, an application for co-financing the PETCS from the resources of the Operational

Programme Digital Poland in the 3-year implementation period from February 1, 2018 to January 31, 2021 was submitted to the Digital Poland Project Center. The total value of the co-financing awarded amounted to almost PLN 143.4 million (Ministerstwo Finansów, 2018b).

Table 2. The largest e-projects of the Polish tax administration

Project	Main (strategic) goal	Period of implementation	Total cost (PLN m)	Co-financing by the EU
e-Declarations 2	streamlining (optimizing) information exchange processes between the tax administration and its stakeholders	2009–2015	90.4	OP-IE – 85%
e-Taxes	simplifying the tax collection system by streamlining (optimizing) the internal business processes of the tax administration	2009–2015	150.7	OP-IE – 85%
e-Registration	streamlining (optimizing) the processes of registering taxpayers and payers	2009–2013	40.2	OP-IE – 85%
CVP	is a continuation of the e-Taxes Program; assumes the launch and development of digital services in the Ministry of Finance in the scope of centralization of the service of corporate income tax (CIT), value added tax (VAT) and the operation of the Uniform Audit File in order to improve control activities	2016–2019	97.6	OP-DP – 85%

OP-IE – Operational Programme Innovative Economy.

OP-DP – Operational Programme Digital Poland.

Source: own work based on Ministerstwo Finansów (2018a).

Implemented within the national tax administration, extensive support of information technology involves significant costs. In part, they are covered by the State Treasury and, to the extent predominant, they are financed from EU funds. It can be assumed that without significant EU funding, the implementation of these projects would not be possible.

The rationale for these expenditures is to limit the size of budget losses due to tax fraud. An additional premise are examples of supporting the efficiency of tax administrations of other countries through technological solutions, e.g. the ZAUBER (Germany) and VRT or FEAST (Great Britain) (*Uzasadnienie do ustawy…*, 2016, pp. 2–5).

The estimates of the tax gap published in recent years in Poland, in particular regarding VAT, indicate its high level (Małecka-Ziembińska, 2017, pp. 45–60). Taxpayers falling into the usual business problems related to the loss of liquidity are much less important in its creation. The most important are criminal groups operating outside the law. The measure to combat this crime is to increase the efficiency of tax audits and to enforce fraudulent or unpaid tax amounts. However, this is not possible without providing tax authorities with appropriate IT tools providing in real time information on potential fraud (e.g. central register of invoices). In the European Union, dedicated IT systems for VAT have implemented, among others, Portugal, Slovakia, the Netherlands and Great Britain. From the examples given, it is worth emphasizing the case of Portugal, which implemented a comprehensive system of e-invoices in 2012 and 2013. The Portuguese solution provides, among others, sending a copy of electronic invoices in real time by taxpayers to tax administration servers, which allows them to identify irregularities on an ongoing basis, including disappearing taxpayer. Invoicing takes place only through certified software (*Uzasadnienie do ustawy…*, 2016, pp. 2–5).

Creating IT systems that support the detection of tax fraud requires not only financing but also adequate legal conditions. For this purpose, in 2016, the Act on specific rules for performing certain tasks in the field

of computerization of the activities of the National Fiscal Administration bodies was adopted (Ustawa z 29 kwietnia 2016). The Act entered into force on June 12, 2016. It creates the legal basis for setting up a limited liability company, which is a special purpose vehicle. The rationale for this solution is – on the one hand – the application of business management solutions common in the implementation of this type of IT projects in the private sector. It involves efficient implementation of projects using the entity's own resources or with the participation of cooperators of recognized reputation. On the other hand – this solution ensures information security of concepts and solutions designed in systems (*Uzasadnienie do ustawy…*, 2016, pp. 2–5).

Conclusions

A well organized tax administration determines an effective and efficient dimension and tax collection. It must be equipped with appropriate IT technologies in the globalization conditions of the Internet age. They are very expensive but necessary. Their lack may result in greater budget losses due to tax fraud. The EU funds play a key role in the computerization of public administration, including tax administration, in Poland. It is extremely important to draw conclusions from previous negative experiences in the field of computerization of public administration and to avoid duplication of errors. The next EU multiannual financial framework may not be so beneficial for Poland.

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EUROPEAN FUNDS AND AIR SERVICES MARKET IN POLAND

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KEYWORDS airports, passenger traffic, European Funds

ABSTRACT

The aim of the study was to analyze the investments made in the air transport sector in Poland financed by the EU programs against the dynamics of the number of passengers served by Polish airports. Secondary studies were conducted by means of statistical data analysis from airports in Poland, the European Union funds and analysis of annual reports on implementation of Regional Operational Programs of individual provinces in Poland as well as CUPT reports. The value of expenditures incurred for the execution of investments at airports in Poland by 2015 is PLN 5.6 billion, of which the total value of funds granted by the EU amounts to nearly PLN 2.2 billion, of which PLN 1.6 billion under the OPI&E and almost PLN 600 million from Regional Operational Programs. Due to the investments made at airports, the dynamics of air transport has increased. In 2008, Polish airports served over 20 million passengers, and in 2016 almost 34 million, i.e. 64.75% more than in the base year, as a result of which the competitiveness of Polish air transport increased due to the greater choice of connections, lower prices, greater security, better integration of airports with railway lines and road transport.

Introduction

The process of globalization encompasses increasingly large areas and becomes an impulse that influences on the development of aviation, economy and growing market expansion of the participating entities. Taking on ever greater share of the international economic space becomes economically viable, as it makes it possible to obtain disproportionately higher profits from global market participation than local one (Hawlena, 2012a, p. 15).

Development of the aviation service market is one of the key factors of globalization and development of global economy, and it also has a huge impact on the volume of tourism. The Polish air services market is part of the European and global transport system (Panfiluk, 2017, pp. 540–547). Dynamic changes in this market took place after Poland's accession to the European Union, due to which investments in the construction and development of communication systems, airports, and higher levels of passenger safety were possible. This, in turn, attracts tourists with different social status and different preferences (Tłoczyński, 2016a, p. 28).

As a result of deregulation and liberalization of the transport market as well as integration transformations, there have been significant changes in the socio-economic systems of many countries and regions, which played a significant role in the civil air transport (Hawlena, Mazurek-Kusiak, Wojciechowska-Solis, 2015, pp. 3639–3647). The rate of society development has become increasingly dependent on the level of air transportation. Due to this, it was possible to quickly reach more and more distant regions of the world, accelerating the activation of areas covered by the network of connections (Hawlena, 2012b, p. 41). Aviation has become a significant factor in global growth, trade, tourism and people-to-people contacts, as it has enabled time and space compression unprecedented in other transport branches (Panasiuk, 2012, p. 51). Being one of the most important instruments of globalization, it largely determines the dynamics of this process, and thus the economic development of the world (Hawlena, 2012b, p. 41).

Processes taking place in the global aviation market interweave and complement the activities and processes within the European aviation area. Growing strength of global aviation groups and liberalization pose new challenges to transport policy in regulating, modeling and monitoring the market, while ensuring its sustainable development. Poland's accession to the European Community and the inclusion of Polish aviation in EU structures has changed the conditions of the aviation sector in Poland (Walczak-Beszczyńska et al., 2010, pp. 200–211).

The rapid development of air services in Poland required large investments at airports that wanted to meet the demands of competition and become a reality in the European market, because at the beginning of the 21st century, Polish airports were characterized by low capacity due to underinvestment. The main problem in the development of this market was to procure the necessary capital to realize the necessary investments. However, while financing the investments and building new airports, their profitability deteriorated, so that not every port was attractive to potential investors. The EU Structural Funds, which are primarily aimed at entering the non-EU markets, developing fair competition, increasing capacity, improving service quality, maintaining a high standard of safety in air transport, are a considerable help in such situation (Tomova, 2016, pp. 81–87).

Purpose and research methods

The aim of the study was to analyze the investments made in the air transport sector in Poland financed by the EU programs against the dynamics of the number of passengers served by Polish airports.

Secondary studies were conducted by means of statistical data analysis (dynamics, chain growth, one-step increment, the mobility factor of Polish citizens) from airports in Bydgoszcz, Gdańsk, Katowice, Cracow, Lublin, Łódź, Modlin, Olsztyn, Poznań, Rzeszów, Szczecin, Wrocław, Warsaw, Zielona Góra, i.e. ports using the European Union funds and analysis of annual reports on implementation of Regional Operational Programs of individual provinces in Poland as well as CUPT reports (Centre for EU Transport Projects). The statistical and financial data refer to years 2007–2016.

Results and discussion

With the development of competition, airports are implementing a number of investment programs designed to increase airport capacity, while ensuring the greatest possible security of air operations and ensuring the sustainable development of air transport (Halpern, Graham, 2015, pp. 213–221). Airports included in the TEN-T (Trans-European Transport Networks), i.e. ports: Bydgoszcz, Gdańsk, Katowice, Cracow, Łódź, Poznań, Rzeszów, Szczecin, Wrocław, Warsaw, carry out investments co-financed by the European Union budget under the Infrastructure and Environment Program 2007–2013 (OPI&E), the TEN-T Community Program and 16 regional programs for 2007–2013. Other airports, that are not affiliated to the TEN-T network, are investing within regional programs.

Table 1. Value in PLN of EU co-financing for individual airports in Poland in 2007–2015

Airport	Value of the whole project	EU co-financing	% of co-financing
Bydgoszcz	71,000,000.00	54,500,000.00	76.76
Gdańsk	505,471,512.28	211,362,972.09	41.82
Katowice	434,385,371.51	172,626,931.39	39.74
Kraków	724,770,695.22	298,296,580.43	41.16
Lublin	342,328,134.54	93,750,000.00	27.39
Łódź	208,371,021.03	109,209,360.23	52.41
Modlin	424,399,809.59	142,126,590.40	33.49
Olsztyn	205,368,085.00	120,393,493.61	58.62
Poznań	258,120,526.51	104,917,623.41	40.65
Rzeszów	417,829,817.43	202,994,970.27	48.58
Szczecin	144,449,631.44	60,032,282.97	41.56
Warszawa	1,444,263,636.11	489,331,885.07	33.88
Wrocław	533,607,450.16	185,495,642.26	34.76
Zielona Góra	5,800,000.00	4,900,000.00	84.48
Total	5,649,165,690.82	2,195,438,332.13	38.86

Source: own study based on annual reports on implementation of Regional Operational Programs, CUIT reports, www.cupt.gov.pl, http://mib.gov.pl, https://www.funduszeeuropejskie.gov.pl (2017).

The value of expenditures incurred for the execution of investments at airports by 2015 is over PLN 5.6 billion, of which the total value of funds granted by the EU amounts to almost PLN 2.2 billion, of which PLN 1.6 billion was allocated under the POIi and almost PLN 600 million from Regional Operational Programs (http://mib.gov.pl). These investments contribute to the development of the so-called *catchment area* and increased demand for air transport services (Suau-Sanchez, Voltes-Dorta, Rodirguez-Deniz, 2015, pp. 157–166). Also investment in the construction of new airports is important, because they can provide significant opportunities for economic development in smaller cities (Wittman, 2014, pp. 220–228) such as Rzeszów, Lublin or Zielona Góra.

On the basis of the data presented in Table 1, it can be noted that the largest co-financing in 2007–2015 was received by the airport in Warsaw (over PLN 489 million), Cracow (over PLN 298 million) and Gdańsk (over PLN 211 million). On the other hand, while looking at the % of financing the investment by means of the EU budget, the airports in Zielona Góra (84.48% of the co-financing for the investments carried out), Bydgoszcz (76.76%), Olsztyn (58.62%) and in Łódź (52.41%), were the most favorable.

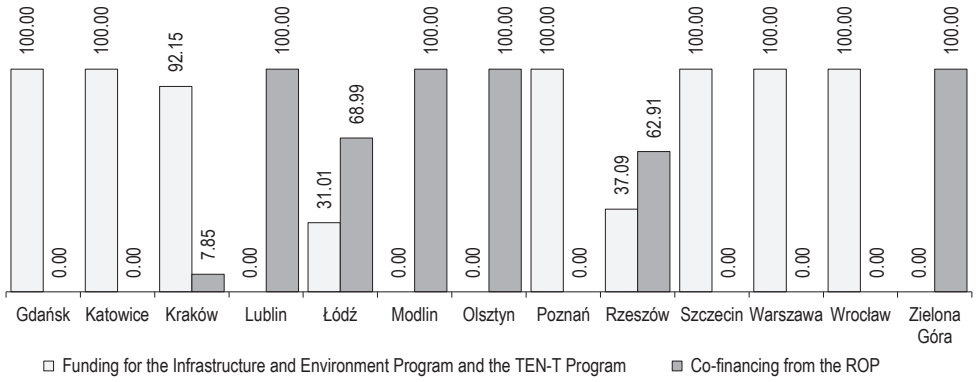


Figure 1. Types of programs in financing investments in airports in Poland in 2007–2015

Source: own study based on annual reports on implementation of Regional Operational Programs, CUIT reports, www.cupt.gov.pl, http://mib.gov.pl, https://www.funduszeeuropejskie.gov.pl (2017).

Investments at airports in Lublin, Modlin, Olsztyn and Zielona Góra have been co-financed only by the Regional Operational Program, whereas investments at airports in Gdańsk, Katowice, Poznań, Szczecin, Warsaw and Wrocław have been financed by the Infrastructure and Environment Program and the TEN-T program. The airports of Cracow, Łódź and Rzeszów were supported by the Regional Operational Program as well as the Infrastructure and Environment Program and the TEN-T program. It can be seen from the data presented in Figure 1 that the affiliation of airports to the TEN-T network also means access to more aid under the Infrastructure and Environment Operational Program. These ports can also benefit from regional programs Airports outside the TEN-T network, for which Regional Operational Programs remain the only sources of EU grants, have not be considered by the national program at all (Walewski, Gościniarek, Czura, 2010). These programs provide grants for regional airports, among others, in provinces: Lubelskie (modernization and expansion of the airport in Świdnik), Łódzkie (airport in Lublinek), Masovian (Modlin airport), Warmia-Mazurian (airport in Olsztyn).

From the budget of the Cohesion Policy for 2014–2020, Poland will receive € 82.5 billion, of which € 4.1 billion will be infrastructure projects of European significance in the field of transport under the *Connecting Europe* instrument, of which some of the airport's financial resources has been already developed. Between 2014 and 2020, the regional authorities will manage about 40% of cohesion policy funds – € 31.28 billion (Tłoczyński, 2016b, pp. 408–414). The funds will be distributed through regional operational programs. Regional programs will be funded by the European Regional Development Fund and the European Social Fund. The amounts allocated to individual provinces are shown in Figure 2.

According to Walewski et al. (2010), it should be noted that in addition to funding from the European Structural Funds, some airports received investment grants from the central budget. The presented picture of available sources of financing investment at airports seems to be a favorable development prospect for Polish airports. It is worth remembering, however, that the availability of funds is also determined by the financial or credit capacity of the airports themselves. While larger airports do not have any problems in this area, the less prosperous ones are experiencing financial difficulties with the project.

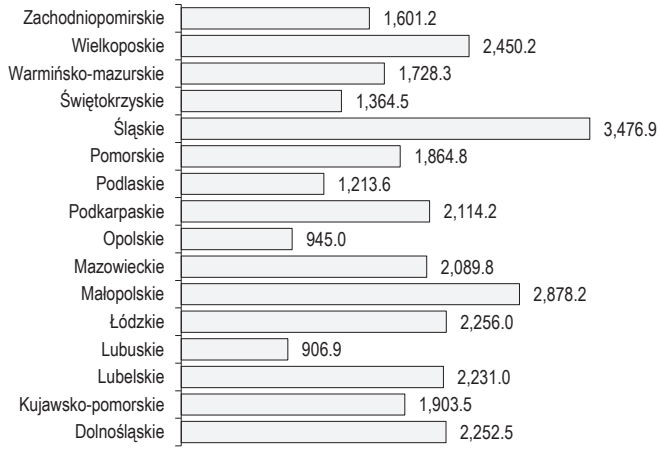


Figure 2. European funds for Polish regions for 2014–2020

Source: Ministry of Infrastructure and Development, www.mir.gov.pl (2017).

The investments made in air transport using EU funds are designed to stimulate the economy, strengthen the EU's position in the global market. Research carried out by Tłoczyński (2016a, p. 28) shows that as a result of the investment, the competitiveness of Polish air transport has increased, which may make better use of the transformation of the world economy.

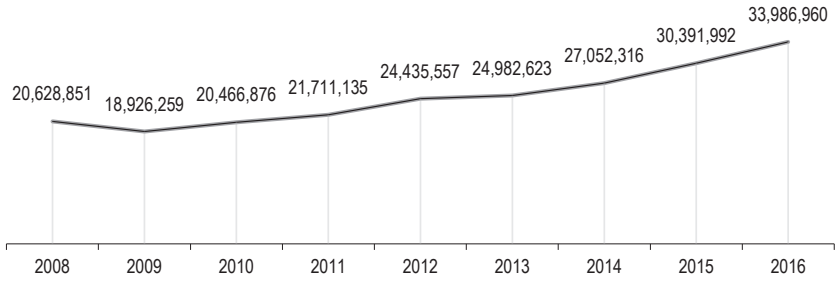


Figure 3. Number of passengers served by Polish airports in 2008–2016

Source: own study on the basis of information obtained from airports, ULC Warsaw, 2010–2017.

In 2008, Polish airports served more than 20 million passengers, in 2009 it was 8.28% less. Since 2010, the number of served passengers has been increasing steadily, reaching nearly 34 million in 2016, i.e. by 11.83% more than in the previous year. As compared to 2008, the number of served passengers increased by 64.75%. The exact number of passengers served and the dynamics of tourist traffic at airports are shown in Figure 3 and Table 2.

Table 2. Dynamics of tourist traffic at Polish airports in 2008–2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dynamics $t_0 = t_{n-1}$	0	–8.25	8.14	6.08	12.55	2.24	8.28	12.35	11.83
Dynamics t_0 = 2008	0	–8.25	–0.79	5.25	18.45	21.11	31.14	47.33	64.75

Source: own study on the basis of information obtained from airports, ULC Warsaw, 2010–2017.

Studies performed by Walczak-Beszczyńska et al. (2010, pp. 200–211) indicate that in 2004, dynamics of air transport has significantly increased as a result of market liberalization, economic growth and regional airport management in attracting low cost operators. At the same time, there were problems of Polish air transport, which resulted mainly from insufficient funds for development and modernization of regional ports, problems with applying for co-financing, which led to the fact that the EU funds were not fully utilized. In addition, the brake on the development of this transport sector was primarily: low awareness of local communities about the importance of airlines for regional development, lack of coherence of road and rail infrastructure with aeronautical infrastructure development programs.

Table 3. Number of passengers served by selected Polish airports in 2008–2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Airport					Bydgoszcz				
Number of served passengers	266,982	264,529	266,480	268,360	328,099	330,658	268,420	318,817	322,135
Chain growth	–	–0.92	0.74	0.71	22.26	0.78	–18.82	18.78	1.04
One-step increment t_0 = 2008	0	–0.92	–0.19	0.52	22.89	23.85	0.54	19.42	20.66
Airport					Gdańsk				
Number of served passengers	1,930,513	1,890,253	2,208,819	2,449,702	2,861,774	2,826,412	3,238,064	3,676,771	3,966,655
Chain growth	–	–2.09	16.85	10.91	16.82	–1.24	14.56	13.55	7.88
One-step increment t_0 = 2008	0	–2.09	14.42	26.89	48.24	46.41	67.73	90.46	105.47
Airport					Katowice				
Number of served passengers	2,402,338	2,301,161	2,366,410	2,500,984	2,518,409	2,506,694	2,668,421	3,044,017	3,201,654
Chain growth	–	–4.21	2.84	5.69	0.70	–0.47	6.45	14.08	5.18
One-step increment t_0 = 2008	0	–4.21	–1.50	4.11	4.83	4.34	11.08	26.71	33.27
Airport					Kraków				
Number of served passengers	2,897,071	2,658,841	2,839,124	2,994,359	3,408,954	3,636,804	3,806,801	4,208,661	4,974,676
Chain growth	–	–8.22	6.78	5.47	13.85	6.68	4.67	10.56	18.20
One-step increment t_0 = 2008	0	–8.22	–2.00	3.36	17.67	25.53	31.40	45.27	71.71
Airport					Lublin				
Number of served passengers					5,697	188,723	184,876	264,070	376,755
Chain growth					–	–	–2.04	42.84	42.67
One-step increment t_0 = 2013*					–	0	–2.04	39.92	99.63

Continuation of Table 3

Airport					Łódź				
Number of served passengers	341,788	312,197	413,392	390,261	463,459	353,633	253,376	287,620	241,256
Chain growth	–	–8.66	32.41	-5.60	18.76	–23.70	–28.35	13.52	–16.12
One-step increment t_0 = 2008	0	–8.66	20.95	14.18	35.60	3.47	–25.87	–15.85	–29.41
Airport					Modlin				
Number of served passengers					857,481	344,566	1,703,743	2,589,286	2,859,191
Chain growth					–	–59.82	394.46	51.98	10.42
One-step increment t_0 = 2012					0	–59.82	98.69	201.96	233.44
Airport					Poznań				
Number of served passengers	1,256,064	1,235,942	1,383,656	1,425,865	1,560,334	1,329,331	1,423,019	1,477,318	1,689,200
Chain growth	–	–1.60	11.95	3.05	9.43	–14.80	7.05	3.82	14.34
One-step increment t_0 = 2008	0	–1.60	10.16	13.52	24.22	5.83	13.29	17.61	34.48
Airport					Rzeszów				
Number of served passengers	320,115	380,711	451,720	487,740	562,934	588,148	599,483	641,146	662,024
Chain growth	–	18.93	18.65	7.97	15.42	4.48	1.93	6.95	3.26
One-step increment t_0 = 2008	0	18.93	41.11	52.36	75.85	83.73	87.27	100.29	106.81
Airport					Szczecin				
Number of served passengers	293,884	276,582	268,563	258,217	347,063	322,334	286,377	412,162	467,437
Chain growth	–	–5.89	–2.90	–3.85	34.41	–7.13	–11.16	43.92	13.41
One-step increment t_0 = 2008	0	–5.89	–8.62	–12.14	18.10	9.68	–2.55	40.25	59.05
Airport					Warszawa				
Number of served passengers	9,436,958	8,278,747	8,666,552	9,322,485	9,567,063	10,669,879	10,574,539	11,186,688	12,795,356
Chain growth	–	–12.27	4.68	7.57	2.62	11.53	–0.89	5.79	14.38
One-step increment t_0 = 2008	0	–12.27	–8.16	–1.21	1.38	13.06	12.05	18.54	35.59
Airport					Wrocław				
Number of served passengers	1,477,901	1,324,483	1,598,533	1,606,222	1,942,000	1,873,245	2,034,515	2,269,216	2,371,621
Chain growth	–	–10.38	20.69	0.48	20.90	–3.54	8.61	11.54	4.51
One-step increment t_0 = 2008	0	–10.38	8.16	8.68	31.40	26.75	37.66	53.54	60.47
Airport					Zielona,Góra				
Number of served passengers	5,237	2,813	3,627	6,940	12,290	12,196	10,682	15,550	8,745
Chain growth	–	–46.29	28.94	91.34	77.09	–0.76	–12.41	45.57	–43.76
One-step increment t_0 = 2008	0	–46.29	–30.74	32.52	134.68	132.88	103.97	196.93	66.98

* The airport in Lublin started its activity in December 2012.

Source: own study on the basis of information obtained from airports, ULC Warsaw, 2010–2017.

It should also be noted that Poland's participation in international air traffic is marginal. According to Eurostat data, this share was 0.653 in 2004and it increased only four times to 2.692 in 10 years. Low level of Poland's participation in international air traffic results, among others, from low mobility factor of passengers in air transport (Figure 4). The mobility factor informs how many times an average citizen has used the air transport (Taylor, Ciechańska, 2015, pp. 255–278).

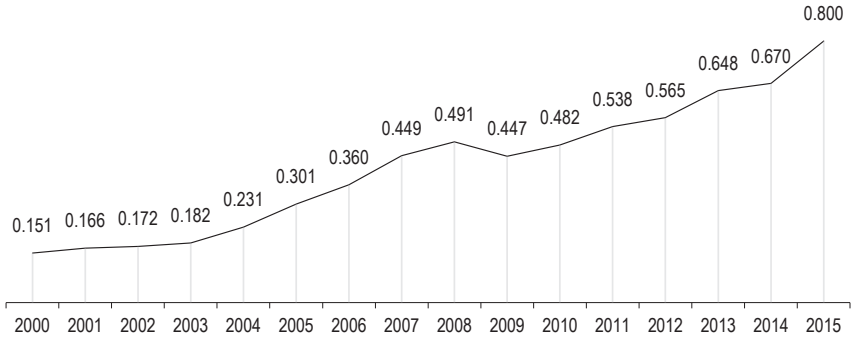


Figure 4. The mobility factor of Polish citizens in air transport in 2010–2015

Source: own study based on Eurostat data.

It is a positive phenomenon that the rate of air travel of Poles is growing year by year, from 0.151 in 2000 to 0.800 in 2015, as shown in Figure 4.

The increase in the mobility factor is mainly due to the increase in the mobility of Poles, the improvement of the financial situation, introduction of low cost airline services and the resulting competitiveness of flights as compared to other modes of transport. Responding to the growing demand for air services, ports are forced to conduct a number of activities to increase the availability of air services, to increase the range of services offered, to improve the quality of their services, to pursue a flexible pricing policy aimed at increasing the competitiveness of their services (Tłoczyński, 2016b, p. 28).

Conclusions

1. Air transport is one of the most important activities of European and global economy, which is essential both for the economic development and the progress of integration processes.

2. Airports included in the TEN-T network have implemented investments co-financed by the EU budget under the Infrastructure and Environment Program, the Community Program and 16 regional programs for 2007–2013. Other airports not belonging to the TEN-T network could only invest within regional programs. On the other hand, for the years 2014–2020 Poland received about € 4.1 billion for infrastructure projects of European importance in the field of transport from the cohesion policy budget, and regional authorities will be able to manage about € 31.28 billion from the cohesion policy fund. However, it must be remembered that the availability of funds is also determined by the financial and credit capacities of the airports themselves.

3. The value of expenditures incurred for the execution of investments at airports in Poland by 2015 is PLN 5.6 billion, of which the total value of funds granted by the EU amounts to nearly PLN 2.2 billion, of which PLN 1.6 billion under the OPI&E and almost PLN 600 million from Regional Operational Programs.

4. Due to the investments made at airports, the dynamics of air transport has increased. In 2008, Polish airports served over 20 million passengers, and in 2016 almost 34 million, i.e. 64.75% more than in the base year, as a result of which the competitiveness of Polish air transport increased due to the greater choice of connections, lower prices, greater security, better integration of airports with railway lines and road transport.

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ECONOMIC ASPECTS OF FINANCING THE TOURISM INVESTMENTS FROM THE EUROPEAN REGIONAL DEVELOPMENT FUND IN LUBLIN CITY DISTRICT

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ABSTRACT

The aim of the study is to determine the quantitative and qualitative effects of co-financing tourism investments of the European Regional Development Fund in the years 2004–2013 in the city of Lublin. Study was conducted with reference to the financial perspective of the European Union for 2004–2006 and 2007–2013 and related to the financial support of the EU tourism sector in the city of Lublin. Present study used original and secondary results. Primary research was conducted using the diagnostic survey method, using a direct interview conducted among 137 employees of the tourism industry employed in Lublin, which was designed to assess the effectiveness of spending the aid. Secondary studies consisted of analyzing reports on the implementation of projects and spending European Funds. Overall, the EFRR co-financing of tourist investments realized in the Lublin city district in 2004–2013 amounted to PLN 117,762,774.3, which accounted for 35.32% of the total value of the projects. It follows that without this help a lot of investment would be unrealized. It was found that only 41.61% of the surveyed population assessed positive investments and 25.55% of respondents were negative, while 16.06% had not any opinion at all. This demonstrates the weak orientation of professional workers in professional matters. The cause of such a state of consciousness may lie in the poor promotion of investment with the support of EU funds. Investments made in Lublin due to the European Union subsidies should contribute not only to the growth of potential of the local tourist economy, but also to the overall economic development.

Introduction

For many years, tourism has been the most rapidly developing national economy among national economies. It has a large impact on GDP growth and the number of direct and indirect market players (Horodecka, 2008, p. 18). It is worth emphasizing, however, that in many countries it is not well appreciated and taken into account in national and regional policy (Wanhill, 2002, pp. 8–11). Different and more objective reasons for this are decisive, as the

tourist market is characterized by an extensive network of trade missions (European Commission). Generally, this market includes tourist demand and supply, and price and terms of sale (Panasiuk, 2014, p. 104; Panasiuk, 2012, pp. 357–370).

At present, economic innovations are particularly appreciated by the innovativeness of the national economy (Stauvermann, Kumar, 2017, pp. 426–433), including the tourism economy, hence the governmental and local sphere of Poland undertake many actions aimed at increasing the innovativeness of the tourist economy. Probably from here Poland initiated the step by step preparation of the National Strategy for Regional Development, which takes into account the development of tourism (Pysiak, 2006, p. 198; Nuszkiewcz, Roman, 2013, pp. 6–7).

In order to promote the development and innovativeness of the economy, including the tourism economy, the European Union has set up structural funds, which are supposed to influence the actions of local governments and market actors related to the tourism economy in a diversified way (Pysiak, 2006, pp. 198–209; Banerjee, Cicowiez, Cotta, 2016, pp. 115–138). They include:

1. European Regional Development Fund (EFRR).
2. European Social Fund (EFS).
3. European Agricultural Guidance and Guarantee Fund (EFOiGR).
4. Cohesion Fund (FS).

Panasiuk (2016, pp. 93–94) writes that the aforementioned funds from the European Union have a significant impact on the activities of local government units, including the development of tourist offer through the development of tourist and para-tourist infrastructure, promotion of the product and shaping the image of the tourist area, yet there is quite large regional differentiation here.

The aim of the study is to determine the quantitative and qualitative effects of co-financing tourism investments of the European Regional Development Fund in the years 2004–2013 in the county of Lublin.

Material and Methods

The study was conducted with reference to the financial perspective of the European Union for 2004–2006 and 2007–2013 and related to the financial support of the EU tourism sector in the county of Lublin. Present study used original and secondary results. Primary research was conducted using the diagnostic survey method, using a technique of direct interview that was conducted among 137 employees of the Lublin tourism sector. They assessed the effectiveness of spending the aid. Secondary studies consisted of analyzing reports on spending the European funds for realized projects. Data originated from available reports. In addition, observation and quantitative methods along with methods of logical operations, as well as monograph method, were used. The Excel 2016 spreadsheet was used for the calculations.

Characteristics of the research area

Lublin is the largest city in the eastern part of Poland and the capital of Lublin province. Its area is 147.5 km^2 and 340.5 thousand residents live here. The city is situated on Lublin Upland, Nałęczów Plateau, Bełżyce Plain and Wyniosłość Giełczewska (Turski, Wyszkowski, 2006, p. 74). The city now has partnership agreements with 25 cities around the world. These include Münster and Delmenhorst in Germany, Lublin in Wisconsin, USA, Tbilisi in Georgia, Debrecen in Hungary, Lwów, Lutsk and Starobielsk in Ukraine, Windsor in Canada and Viseu in Portugal (Kawałko, 2012, pp. 575–576).

The rich cultural resources of Lublin make the city more and more interesting for tourists and it is an excellent base for local, national, and foreign trips. In addition, such destinations as Janowiec, Kazimierz Dolny, Kozłówka, Naleczow, Zamość are some of the most unique objects, not only in the Lublin region, but also in the whole Poland. They are well known to tourists due to their location, history and unique natural values (Kowalczyk, 2011, p. 73). For many years, Lublin has hosted many cultural events as well as film, music and theater festivals that attract many tourists. At the beginning of June, there is Night of Culture, which transforms the streets of Lublin into one big stage of unique cultural events and atypical installations. During the holidays, there is Jagiellonian Fair, Magicians Carnival, Festival of Other Sounds, International Folklore Meetings. September is the month, when Lublin becomes the capital of cooks, as the European Festival of Taste takes place. During the autumn and winter, there are International Dance Theater Meetings, International Jazz Festival and International Performance Festival. Thanks to all these events, Lublin participated in the final of the competition for the title of European Capital of Culture in 2016 (Nowak, 2014, pp. 15–32).

Results and Discussion

The analysis of the Lublin Development Strategy shows that the main goals of tourism development in Lublin include:

- increase of economic importance in economic development,
- increase in the quality of life of residents and improvement of the quality of the environment,
- cooperation and integration for tourism and its environment in the social, spatial and economic dimension.

In general, these are correctly identified goals, which is also noticed by other authors (Balcerzak-Kaleta, Raźniewski, 2009a, pp. 244–254), but the essence is their detailed understanding and dynamic implementation.

Until 2004, Poland used the *pre-accession assistance*, i.e. funds intended for countries applying for membership in the European Union. After joined the EU in May 2004, Poland could continue to use the pre-accession aid and, in addition, as a full member of the EU, to receive new support. Between 2004 and 2006, EU funds were used for the first time on the same basis as other Member States (Balcerzak-Kaleta, Raźniewski, 2009b, pp. 244–254). The years 2007–2013 are another programming period, under which Poland was granted the support for development of individual regions and the whole country, so that the standard of living of the population approached the European standards, which is shown in Table 1.

Table 1. Value of funds from the European Regional Development Fund to finance investment in tourism in the Lublin city district in 2004–2006 and 2007–2013

Years	Number of projects	Value of project in w PLN	Financing from EU in PLN	% of financing
2004–2006	4	27,859,866.69	19,581,455.90	70.29
2007–2013	51	305,531,507.59	98,181,318.38	32.13
Total	55	333,391,374.30	117,762,774.30	35.32

Source: own study own study based on www.mapadotacji.gov.pl (15.07.2017).

The value of investment in tourism in 2004-2006 amounted to almost 28 million, including over 19.6 million received as the EU subsidy from the Integrated Regional Operational Program. It is also worth noting that Lublin

received EU funds at the 70% co-financing level (Table 1). The funds for extension were granted by the Provincial Public Library. H. Łopaciński in Lublin (PLN 7.5 million); The Arch. St. John the Baptist and St. John the Evangelist in Lublin for the 3rd stage of renovation and organization of the Museum of the 200th anniversary of the Archdiocese of Lublin (PLN 6 million); The Lubelskie Museum for the protection and maintenance of the Lublin Castle (PLN 5.5 million) and the Provincial Headquarters of the State Fire Service in Lublin to provide a sense of security for tourists through the creation of a public safety zone in the area of Metalurgiczna Street in Lublin (PLN 0.5 million).

In 2007–2013, The City District received subsidies from the European Union of 98 million for the implementation of 51 tourism projects. This grant covered 32.13% of all investment in tourism (Table 1). The largest co-financed investments are the construction of an exhibition and congress and conference facility dedicated to the presentation and promotion of innovative solutions in entrepreneurship and science (PLN 36 million) and the construction of the Regional Exhibition and Show Center in Lublin (PLN 16 million). These projects have contributed to increasing the tourist attractiveness of the city. Due to the European Funds, the city of Lublin nowadays is a real pearl among the monuments of architecture and urbanism of the whole region. Development of accommodation and recreational facilities occurred, congressional and trade tourism has been developed dynamically, as well as events related to thematic areas with Lublin industrial specialization, aimed at intensifying international contacts, especially in the area of Eastern Partnership. This also results in increased employment in the tourism sector.

Lublin received the most financial resources for investments in the tourism industry from the Operational Program Development of Eastern Poland, as much as nearly PLN 52 million, which constitutes 43.88% of all received subsidies in 2004–2013. From this program, only two investments were realized (Lublin Conference Center and II stage of construction of the Regional Exhibition and Fair Center in Lublin). Both investment projects reached over PLN 136 million, of which 38% were from the European Union. Up to 48 projects have been financed from the Regional Operational Program of Lubelskie Province amounting to over PLN 46 million, which accounts for 39.24% of grants received during the period considered. Lublin received the least funds from the Regional Operational Program of the Podlaskie Province, which were dedicated to the creation of a spa and wellness center in the Czarnecki Manor. This investment included three counties: Białystok, Lublin and Lublin city (Table 2).

Table 2. Programs involved in financing investment in tourism in the Lublin city district in 2004–2006 and 2007–2013

Program	Projects		Value of project		Financing from EU in PLN		% of financing
	number	%	in PLN	%	in PLN	%	
Operational Program Development of Eastern Poland 2007–2013	2	3.64	136,104,262.73	40.82	51,669,976.18	43.88	37.96
Integrated Operational Program of Regional Development 2004–2006	4	7.27	27,859,866.69	8.36	19,581,455.90	16.63	70.29
Regional Operational Program of the Podlaskie Province 2007–2013	1	1.82	877,770.38	0.26	304,032.87	0.26	34.64
Regional Operational Program of the Lublin Province 2007–2013	48	87.27	168,549,474.48	50.56	46,207,309.33	39.24	27.41
Total	55	100.00	333,391,374.00	100.00	117,762,774.00	100.00	35.32

Source: own study own study based on www.mapadotacji.gov.pl (15.07.2017).

Only in the Lublin city district, there were 43 projects financed by the European Regional Development Funds with a total value of over PLN 305 million, including 35.51% of the subsidy. On the other hand, more than one

administrative unit implemented 12 projects worth nearly PLN 28 million and PLN 9 million of subsidies (Table 3). The projects were implemented jointly with the districts of Radzyń, Lublin, Wlodawa, Zamość, Łuków, Białystok, Lubartów, Tarnów, Cieszyn, Bieruń-Lędziny and Gliwice.

Table 3. Area of implementation of projects from the European Regional Development Funds in the district of Lublin city in 2004–2013

Project realization	Projects		Value of project		Financing from EU in PLN		% of financing
	number	per cent	in PLN	per cent	in PLN	per cent	
Only in Lublin city district	2	3.64	136,104,262.73	40.82	51,669,976.18	43.88	37.96
On a larger area than Lublin city district	4	7.27	27,859,866.69	8.36	19,581,455.90	16.63	70.29
Total	1	1.82	877,770.38	0.26	304,032.87	0.26	34.64

Source: own study own study based on www.mapadotacji.gov.pl (15.07.2017).

By analyzing data presented in Table 4, it can be seen that the most co-financed investments were related to the organization of cultural and tourist events (over PLN 140 million, including 37.73%). The second place included investments related to the accommodation and catering facilities (over PLN 126 million, including co-financing amounting to 28.05%). In the third place, the development, construction and modernization of sports and recreation facilities was appreciated, as over PLN 36 million was spent, receiving EU funding in the amount of PLN 8 million, which accounted for 22.17% of all expenditures. The fourth position was taken by the development of culture, where over PLN 28 million was spent, but the value of co-financing from EU funds reached the level of 70.05%.

Table 4. Directions of investment implementation in the field of tourism in Lublin city district in 2004–2013

Investment in	Projects		Value of project		Financing from EU in PLN		% of financing
	number	%	in PLN	%	in PLN	%	
Base for organizing cultural and tourist events	5	9.09	140,132,481.75	42.03	52,878,330.52	44.90	37.73
Accommodation and catering	33	60.00	126,502,768.24	37.94	35,486,158.41	30.13	28.05
Cultural development	5	9.09	28,774,184.65	8.63	20,156,355.33	17.12	70.05
Development of sports and recreation facilities	10	18.18	36,178,259.08	10.85	8,021,044.19	6.81	22.17
Others	2	3.64	1,803,680.56	0.54	1,220,885.83	1.04	67.69
Total	55	100.00	333,391,374.28	100.00	117,762,774.00	100.00	35.32

Source: own study own study based on www.mapadotacji.gov.pl (15.07.2017).

It is interesting to look at the assessment of equity of EU funds disbursed by travel industry workers. Most respondents (41.41%) positively assessed the investment subsidy. Among the motifs of the assessment, there were: increase of the attractiveness of the city, development of culture and growth of tourism in the city, which led to increased employment in the tourist industry. In opinion of 25.55% respondents, the aid was not effectively spent and well suited to the needs of tourists, as the short deadline for application preparation, bureaucracy and formalization of applications, the need for self-contribution has made it impossible for any entity to be able to obtain such support, which reduced the availability of funds for a wide range of social groups (Figure 1).

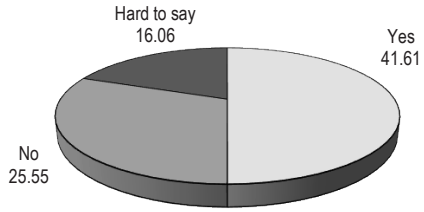


Figure 1. Evaluation of the effectiveness of spending aid from the European Regional Development Fund in respondents' opinions

Source: own study based on diagnostic survey.

Another issue assessed by the respondents was the assessment of subsidized investments from a professional and social point of view (Figure 2). In this case, they most appreciated the investment referred to as Protection and Renovation of the Lublin Castle (32.85% of indications). This project received PLN 5.5 million from the European Regional Development Fund. Its essence was the general renovation of the monument, which was long delayed due to no possibility of financing. During the 21 months of the project implementation (from 1 October 2006 to 30 June 2008), all planned maintenance and repair works were carried out. An important element of the project was to increase accessibility for people with disabilities. In addition, the archaeological research carried out during the renovation has contributed to the enrichment of knowledge about the oldest history of the castle hill. Traces of settlement and the existence of man thousands years ago BC, were discovered here. Second place was the construction of the Regional Exhibition and Fair Center in Lublin (23.36% of indications).

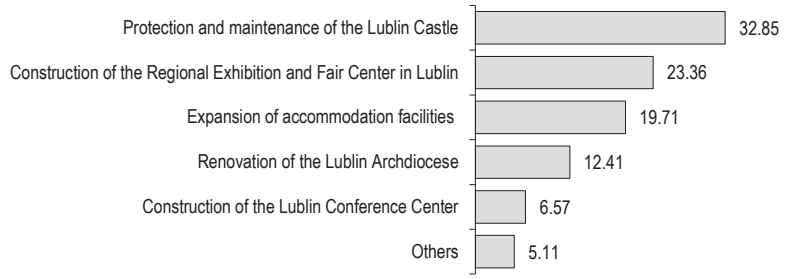


Figure 2. The best investments made from the European Regional Development Fund in respondents' opinions

Source: own study based on diagnostic survey.

The project was based on the construction of an exhibition hall of 8 thousand square meters, modernization of the exhibition area in the existing hall (2.5 thousand square meters), construction of 2 conference rooms for 150 people each and adaptation of the existing facility to the possibility of organizing conferences for 1,500 people, creation of an external exhibition area of 5 thousand square meters and creation of about 500 new parking spaces. These elements contributed to the possibility of organizing cultural and sports events for 5,000 people (at one time). Specialty of the Fair are events related with the areas of Lublin industrial specialization, aimed at

intensifying international contacts, especially in the area of Eastern Partnership. Third place was the expansion of accommodation (19.71% of indications). Due to the EU funds, new hotels such as Hotel Wieniawski, Focus II, Willowa, "Nad Zalewem" and Agit, accommodation for less demanding clients "Grodzka 20", "Trybunalska", as well as hotels and lodgings, were opened in the vicinity of Lublin. According to 12% of respondents, the best investment funded by EU funds was the renovation of the Arch. St. John the Baptist and St. John and the organization of the Museum of the 200th anniversary of the Archdiocese of Lublin. During the project, renovation of wall polychrome and portals of the Treasury and the Acoustical Chapel was carried out. In addition to conservation work, an important part of the project was the exposition of priceless monuments of sacred art – liturgical vestments and goldsmithery objects. The renovated rooms are equipped with 23 illuminated display cabinets with exhibits. The lighting of the late Baroque polychrome by Joseph Meyer from 1755–1758 was also installed. The third stage of the work also covered the conservation of the polychrome vault and walls of 5 chapels: Angels, St. Gonzaga, St. Nepomucen, St. Xavier, St. Mary Magdalene and 6 the altars. An important part of the project was the conservation of antique liturgical vestments. The construction of the Lublin Conference Center was appreciated by only 6.57% of the surveyed people, which proves the low knowledge of employees of the tourism industry in the field of business tourism. The exhibition hall of 2,500 m² serves to present and promote the achievements of innovative companies. There are demonstrations and exhibitions on innovative products from various industries, especially the high-tech. In addition, it is a place of presentation of the offer of business institutions supporting innovation. The knowledge festivals are periodically held in the hall, where multimedia presentations of study programs, and television broadcasts from research laboratories with spectators take place.

Conclusions

1. Overall, the EFRR co-financing of tourist investments realized in the Lublin city district in 2004–2013 amounted to PLN 117,762,774.3, which accounted for 35.32% of the total value of the projects. It follows that without this help a lot of investment in the field of tourist and para-tourism infrastructure, would not be realized.

2. While examining the opinion among employees of the tourist industry on the appropriateness of funds spent, it was found that only 41.61% of the sample assessed the investments positively and 25.55% of respondents were negative, 16.06% did not have any opinion on this. This indicates poor orientation of professional employees in professional matters. The reason for this state of consciousness may also lie in the poor promotion of investment accomplishments with the support of EU funds. In this situation, promotional and educational activities are necessary.

3. Respondents rated the protection and conservation of Lublin Castle the best (32.85% of responses), and in the second place, the Construction of Regional Fair and Exhibition Center (23.36%). However, it is disturbing that only 6.57% of surveyed employees in the tourist industry appreciated the construction of Lublin Conference Center. This proves their incomplete knowledge of business tourism, which seems to be highly disturbing and requiring catching up with this state of knowledge.

4. Investments made in Lublin due to the European Union subsidies should contribute not only to the growth of potential of the local tourist economy, but also to the overall economic development, however, it is necessary here the parallel development of education of the tourism industry employees to be able to appreciate and use the created tourist and para-tourism infrastructure.

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USE OF THE PARTICIPATORY BUDGET IN THE PROCESS OF CREATING URBAN RECREATIONAL SPACE (ON THE EXAMPLE OF SZCZECIN)

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Abstract

Modern and competitive cities must offer their residents the highest possible quality of living, which is directly related to the character and quality of urban space, especially space of recreation. What hence becomes of key importance is the shaping of urban space which is attractive to the residents, as the future of urban areas depends mostly on the capacity of every city to maintain high attractiveness as a spot of widely understood consumption. One of the ways of improving life quality in cities is to create attractive and accessible recreational space which, while creating a friendly environment for leisure time activities, may impede the process of urban sprawl. In Poland next to activities carried out to that aim by local governments, in recent years there have been investments realized within Participatory Budgets which allow for the residents' participation in that process. Shaping recreational space in this case has a local dimension (both in the understanding of one's own district and the whole city – Szczecin in this case), and over the years a methodical approach of the residents may be seen in terms of choosing projects that are long-term (e.g. city bike) and create modern recreational space that fits the residents' needs.

Introduction

While functioning in a competitive environment municipal governments focus primarily on exogenic functions, the objective of which is to support the development of cities and build their competitive position. However, with the rapid development of urban areas, it has become apparent that an urban sprawl subsequently occurs, resulting from the city's residents moving to suburban and outskirt areas, which has many negative consequences. Considering

that one of the main reasons for the move from urban to suburban areas is the quality of urban space, the creation of space which fulfills the residents' expectations seems to be a key issue. City residents have been increasingly interested in participating in many activities led mostly by local authorities, such as the activity of estate councils, as well as submitting projects and voting on the Participatory Budget. The aim of the paper is to try to identify and evaluate the significance of the Participatory Budget for the creation of urban recreational space, on the example of Szczecin.

The process of shaping contemporary urban space

The functioning of cities and urban (urbanized) areas encompasses so many various spheres of the economy and human existence that defining the concept of a city (urban/urbanized area) combines many branches of science (i.a. economy, geography, urban sciences or sociology) and remains a debatable issue (Nowak, Skotarczak, 2012, p. 101). A definition which synthesizes the general determinants of a city was formulated by M. Weber, who regarded a city as a fusion of three defining systems: the market, the administrative and political center and the urban community, taking into consideration such qualities as compactness, size and political autonomy of a city (Paszkowski, 2011, p. 14). Contemporary definitions treat the concept of a city very widely, oftentimes attempting to include all aspects of its functioning. According to Z. Paszkowski, a city is: a spatial and social creation of great complexity, developed within particular political, social and economic conditions, within a determined space. It reflects the actions of market forces in time and space and is a place of exchange of thought and civilization development, reflecting the goals, aspiration and culture of its residents (Paszkowski, 2011, p. 16). Treating cities as systems consisting of mutually related elements (Gorzelak, 2008, p. 454), with a positive correlation of the city's size and the diversification of its functions (Gorynia, Łaźniewska, 2012, p. 187), reflects their multifunctional character.

The size and diversification of functions in cities change not only within time and space, but what also varies is the rank and significance of any particular type of activity for the functioning of a city and its competitiveness (Meyer, 2015a, p. 213). An increasing importance is attributed to endogenic functions, which, encompassing types of activity the basic goal of which is to satisfy the internal needs of a city and creating desired life conditions for residents and business owners, had not been perceived as a factor of importance in building a city's competitive position. That role has for a long time been attributed first and foremost to exogenic functions, which are directed at individuals from outside the city who build the city's relations with other areas and subjects. However, in recent years a tendency has become apparent to substitute traditional "hard" development factors (i.a. infrastructure, land rent, cluster benefits) for "soft" ones such as living conditions, aesthetic surroundings or attractivity for tourists (Bontje, Musterd, 2009, p. 849). The ongoing processes of uncontrollable urban sprawl (Zhang, 2004, pp. 56–57; Sudhira, Ramachandra, 2007, p. 1), their negative consequences on all platforms (environmental, social and economical) as well as the cost borne mostly by the city both in a financial and social sense (Karakayaci, 2016, p. 817; Correia, de Abreu e Silva, 2015; Couch, Petschel-Held, Leontidou, 2008, p. 294) have drawn attention also to the reasons behind urban sprawl. Among those, factors connected with the decrease of living quality in cities clearly stand out. They include lack of the feeling of safety and the mediocrity of school facilities as well as the environmental issues concerning the surroundings the residents live in: noise, smog, lack of green areas, lack of attractive leisure space (Karakayaci, 2016, p. 817) and lack of competence among urban planning services in terms of controlling spatial development. This clearly indicates the significance of environment quality for city residents, who, in search of better living conditions, decide to leave the central areas of a city and move to the suburbs.

What hence becomes of key importance is the shaping of urban space which is attractive to the residents, as the future of urban areas depends mostly on the capacity of every city to maintain high attractiveness as a spot of widely understood consumption. Among the determinants which favor the creation of cities as consumption centers a group of factors can be distinguished, encompassing amenities related to the aesthetics of surroundings and comfort of living and resulting from physical and geographical conditions (i.a. climate including the weather, environment cleanliness, location, attractiveness of the environment). The most important and obvious factor remains the plurality and diversity of goods and services offered, both of global and local character. The remaining determinants focus on the accessibility and quality of public goods (one of the consequences being the sense of security) and the accessibility of urban areas which determines the access to consumption goods (Meyer, 2016, p. 434).

Increased mindfulness in the process of shaping urban space fits in with the contemporary trend of creating XXQ cities (or cities with XXQ factor), which have for a long time been considered the example of a "perfect city" by urbanists. XXQ (XXQuality) cities are cities that offer the best possible quality of life (XXQ size). Within the five factors determining the quality of living the second one are ecological resources (Mierzejewska, 2011, p. 89), signifying environmental bases which condition the residents' quality of life (clean environment, low noise level) and determine the urban greenery areas, water resources and open space resources thereby guaranteeing a sufficient level of biodiversity (Nijkamp, 2008, p. 12). A perfect city, in turn, is currently understood as a "challenge to create a perfect living environment for humans, which should satisfy both the needs of the individual, person, resident and the needs of a community which constitutes an urban, local and regional society. (...) Contemporary idealism encompasses not only the good of an urban society (in the understanding of renaissance theorists and utopians), but also the need for balancing civilisation development with the protection of the natural environment and climate, especially in the context of global urbanization issues" (Paszkowski, 2011, p. 19). Modern and competitive cities must therefore offer their residents the highest possible quality of living, which is directly related to the character and quality of urban space.

Recreation as one of the factors shaping urban space

Within many functions performed by the city which influence the shaping of its space, it is possible to distinguish recreation as one of the key functions related to the residents' mood and well-being, and, as a consequence, their quality of life. According to T. Wolańska, recreation "comprises various activities that are undertaken in one's free time, voluntarily, for pleasure, for the development of one's personality, or to restore and increase one's psychological and physical capacity" (Meyer, 2015b, p. 356). A similar definition has been proposed by A. Kowalczyk, in which recreation includes "any activity undertaken voluntarily with a view to restoring one's physical and psychological capacity, specifically including participation in culture, games, and sports, which takes place in time that is free from school, work, or household activities" (Kowalczyk, 2000, p. 287). The definition by S. Tanaś is concise, but contains the same main attributes, stating that recreation is "any form of regeneration of human capacities by spending one's free time in an active or passive manner" (Tanaś, 2008, p. 10). A comprehensive definition of recreation, comprising its key aspects, has been formulated by A. Dąbrowski: "all socially acceptable forms of human activity taking place in one's free time; undertaken voluntarily, gratuitously, and for pleasure; which serve to restore and enhance one's capacities, enable playful, active, and diverse self-realization; and are performed individually or in groups, or occur as a global process" (Dąbrowski, 2006, p. 37).

Recreational space has not yet been clearly or satisfactorily defined, nor systematized in detail (as opposed to tourist space, which has been defined, classified, and categorized by many authors, including Liszewski, 1995; Liszewski, 2013; Włodarczyk, 2014; Kowalczyk, 2014; Więckowski, 2014). The most commonly cited definition is the one by M. Drzewiecki, defining recreational space as "a fragment of geographical space with characteristics enabling and conducive to various forms of leisure, where recreational processes of a socially and spatially significant extent occur" (Drzewiecki, 1992, p. 37). According to S. Toczek-Werner, in a (recreational) space used for recreational activities, one can distinguish recreational activity centers (fulfilling the expectations and needs of individuals who prefer specific forms of activity – e.g. fitness centers, swimming pools, dance studios) and areas than enable recreation without restricting its form (e.g. parks, squares, sports fields, playgrounds) (Toczek-Werner, 2007, p. 18).

For the purpose of the present paper, recreational space is assumed to be any space where recreational activities are undertaken. The nature of a given location allows for distinguishing between open (outdoor) and closed (indoor) spaces, and for identifying spaces associated with a specific type of recreational activity (e.g. swimming, dancing, walking). Additionally, each space type may be considered formal (where activities are organized and/or provided for a charge) or informal (where activities are undertaken individually and free of charge). Recreational space is most often perceived in the context of activities undertaken by residents of an area in their spare time.

Shaping recreational space in cities remains to a significant degree in the power of local authorities, which are legally compelled to satisfy collective needs of the community by creating conditions for rational and harmonic growth and conditions for full participation of the residents in the life of the community. Dedicated tasks of the local governments are directly related to shaping urban space, as they encompass issues of social and technical infrastructure, civil order and safety as well as spatial and ecological order. The necessity for maintaining spatial and ecological order is particularly determined by the local government's responsibility for the spatial organization of the city, which should take into consideration the residents' needs in terms of quality of living, including leisure time recreational activity.

Over the last 10 years the idea of a participatory budget has developed in Poland. The mechanism of such a budget was created in 1990 in Porto Alegre, Brasil; in Poland it was first implemented by the city of Sopot in 2011 (Dolewka, 2015, p. 63). The participatory budget is most often defined as a "process, during which the residents of a given territorial unit directly decide or participate in making decisions about the allocation of the entirety or a part of available public funding" (Kocot, 2014, p. 84). The participatory budget is similarly defined by international institutions (World Bank's Empowerment…, 2018) or foreign researchers active in this area (Wampler, 2007, p. 21). The essence of a participatory budget has also been described by, a.o., M. Dworakowska (2014, p. 63), G. Kocot (2014, p. 84), E. Wojciechowski (2016, p. 380), M. Piotrowski et al. (2014, p. 69), H. Silver, A. Scott, Y. Kazepov (2010, p. 472), Z. Dolewka (2015, p. 63), K. Leśniewska-Napierała (2017, p. 10), and the particulars of its construction can be found in the works of W. Kębłowski (2013; 2014). The concept of residents participating in the decision-making process regarding their closest surroundings prompts them to become active participants in the process of shaping space, including, to a significant degree, recreational space. This way recreational space remains in the center of the residents' scope of interest as space where they can realize their activities not related to work duties and the quality of which significantly impacts their comfort of living.

The participatory budget and the recreational space in Szczecin

The recreational space in Szczecin is determined by the extensity and specificity of the city's natural environment. Szczecin has a large surface area (approx. 301 km^2), where green areas account for 17.54 % of the total area, which, combined with bodies of water (23.68%) and agricultural land, gives 60.81% of the total area of the city (*Raport…*, 2017). This large share of green areas and bodies of water has a strong impact on the character of the city and creates favorable conditions for recreation. Enjoyment of the natural environment is facilitated by the constantly developing infrastructure (marinas, beaches, forest clearings, educational trails, hiking trails, cycling roads). Furthermore, the city has extensive facilities for undertaking a variety of recreational activities. These mainly include buildings and infrastructure for recreational sports, such as stadiums (12), sports fields (231), indoor swimming pools (8), marinas (12), tennis courts (7), or outdoor gyms (14). Various businesses and institutions use the city's technical facilities to enable the pursuit of various interests – e.g. sports clubs (273), gyms and fitness centers, dance schools, community centers etc. Infrastructure for culture and entertainment includes a concert hall (which hosted 436 events in 2016), cinemas (5), museums (7), and theaters (5).

The development of recreational space which would enable the residents to spend their leisure time appealingly seems to be one of the urban authorities' priorities. The long-standing Szczecin Development Programme for the years 2017–2023 has a total budget of 3 705 068 666 PLN (Wieloletni Program Rozwoju Szczecina 2017–2021 z perspektywą do 2023 roku), intended for the realization of four main goals. Almost 2/3 of that amount has been directed to the realization of the "IV Szczecin – an attractive metropolitan city" goal, which involves tasks related to improving transport accessibility and the communication outline of the city as well as supporting growth and harmonization of Szczecin's metropolitan functions and the realization of projects which increase the city's prestige. It can be assumed (after analyzing projects planned for realization) that to a large degree those are projects which impact the shape of recreational space. Almost 16% of the budget (752,880,805 PLN) is directly dedicated to the realization of objectives related to the goal "I Szczecin – city of high living quality". Those are practically exclusively projects which directly or indirectly shape recreational space or increase its quality, encompassing tasks from the area of protection and usage of natural resources, revitalization and development of urban space as well as supporting the development of effective social services. Among the projects planned within the remaining goals, *II Szczecin – city of modern, competitive and innovative economy* and *III Szczecin – city of a high intellectual capital* potential solutions can also be found that influence the form and quality of recreational space. Especially within the scope of goal II, where one of the tasks has the aim of dynamizing tourism development while using natural resources and the historical and cultural heritage, which will directly influence recreational space in the city.

Simultaneously with activities undertaken by local governments as part of their legal duties, since 2013 there have also been investments undertaken which had been chosen by the residents by way of discussion and voting on the proposed projects. The process of creating and realizing the Participatory Budget evolved for three years, to finally assume a continual form in 2016. The procedure begins with the residents submitting a proposal of tasks on a special application form, which is sorted to the right category depending on the area of concern. There is a distinction between city-wide projects and four groups of district projects – North district, Prawobrzeże district, City Center district and West district. By way of voting by authorised individuals projects for realization are elected.

In 2018 over 26,000 residents participated in the Participatory Budget vote, casting 75,047 votes (http://bip.um.szczecin.pl, 2018). 13 projects were chosen from over 100 submitted to the 2018 Szczecin Participatory Budget. Those were, i.a., the revitalization of Żeromski Park, a welcome mural for out of town guests at the railway station

exit on Owocowa St., creation of "The Best Playground in the City" in Prawobrzeże district or the Szwaja Literary Garden. The resource pool for this edition of the SPB is 8 million PLN. Most of the projects chosen have a sports profile, and Arkonia Szczecin won in three categories – including the main category, the city-wide project. In Lasek Arkoński park there will be a new pitch as well as the first air dome in the voivodeship with a removable roof.

In 2017 over 34,000 residents participated in the Participatory Budget vote, casting 94,964 votes (http://bip.um.szczecin.pl, 2018). The budget amounted to 7 million PLN and the residents could choose from 122 submitted projects. Table 1 presents the list of winning projects of the Szczecin Participatory Budget for 2017 and 2018.

Table 1. List of winning projects of the Szczecin Participatory Budget in 2017 and 2018

Area	SPB 2017		SPB 2018	
	name of the project	number of votes	name of the project	number of votes
		CITY-WIDE GOALS		
SZCZECIN	Bukovasport	5,160	Modernization of football fields at the k.s. Arkonia Szczecin stadium on Arkońska St. (stadium) as well as the social building	4,260
		BIG DISTRICT GOALS		
North	Brodowski Żelechowa Park – sensory playground, sports and recreation zone	1,517	Construction of a modern indoor synthetic pitch on Nehringa St. 69	1,107
Prawobrzeże District	Foundation for animals Dzika Ostoja – rehabilitation center for wild animals including a retreat and educational purposes	3,742	Freedom Szczecin – best playground in the city	2,511
City center	Level pavements for Szczecin	959	Revitalization of alleyways and surrounding modernizations in Żeromski Park	704
West	Multifunctional pitch at Arkonka by Arkonia Szczecin Stadium	2,968	Purchase and installation of an air dome with a lighting and heating system over the football pitch on Arkońska St. (stadium) measuring 100 m × 50 m	3,635
		SMALL DISTRICT GOALS		
North	1. City bike station on Duńska St.	1,286	1. Construction and modernization of the parking lot and pavements of the leisure and sports facility on Nehringa St.	1,096
	2. Flowers in the city – Przyjaciół Żołnierza St.	1,145	2. Construction of lighting on Pszczelna St.	717
Prawobrzeże District	1. Revitalization of a fragment of ks. Albert Wilimsky park in Podjuchy	3,397	1. Szwaja Literary Garden	2,311
	2. Rose gardens in Kijewo district	2,380	2. Rose gardens II	808
City center	1. City bike station by TME	849	1. Szczecin – giant inscription as a tourist attraction and interesting souvenir photo opportunity	946
	2. Intelligent solar furniture (votes)	799	2. Welcome to Szczecin – mural on a wall on Owocowa St. opposite the new railway station entrance	662
West	1. Bike and pedestrian track by Głębokie Lake on the side of Ppłk. H. Kupczyka St. allowing for a collision-free and safe passage around the lake	3,222	1. Construction of a sports ability zone by Arkońska (stadium) St.	4,489
	2. Street Workout gym at the Arkonia Szczecin stadium	2,851	2. Safe parking – safe children. Construction of a parking lot by Elementary School no. 53	1,759

Source: own elaboration based on http://bip.um.szczecin.pl.

In former years the residents had chosen the following investments:

3. In 2016 the Participatory Budget allocated 6 mln PLN, almost 35,000 people voted, 64,558 votes were cast, and the following projects won:
   - Szczecin City Bike – stage two (West District),
   - Warszewo – Podbórz Park (North District),
   - reconstruction of the intersection of Przelotowa, Łubinowa, Nałkowskiej and Handlowa Streets aimed at improving traffic flow and safety,
   - Flower Avenue covered in flowers (City Center District).
4. In 2016 the Participary Budget allocated 5 mln PLN, over 48,000 people voted, 84,822 votes were cast, and the following projects won:
   - realization of an investment consisting in the repair and modernization of a shelter for stray animals in Szczecin – city-wide project,
   - bike revolution – 20 bike tracks in the city – city-wide project,
   - construction of a dog park in the City Center of Szczecin – city-wide project,
   - repair of the pavement and bus stops on Asnyka St. plus additional shelters and rearranging the green area to make it functional and aesthetically pleasing City Center District,
   - modernization of the underpass under Wyzwolenia Av. – City Center District,
   - Arkonka and Goplana – refreshment and marking of the tourist-recreational trail along with placement of benches – West District,
   - construction of a multifunctional pitch, pavements and infrastructure area management on Krakowska, Zbójnicka and Lwowska Streets – West District,
   - adaptation and renovation of a sports pitch including the construction of sanitary and social infrastructure – Prawobrzeże District,
   - hardening of the surface of Głęboka St. – North District.
5. In 2014 the Participatory Budget allocated 5 mln PLN, 69 178 votes were cast, and the following projects won:
   - Szczecin City Bike,
   - Modernization of Brodowski Lake and surrounding areas.

Analysis of the projects submitted and chosen by the residents within the participation in the city's land planning indicates an increasing care about the quality of their immediate surroundings and access to attractive areas dedicated to varied forms of recreation. Among the winning projects in the previous editions of the Szczecin Participatory Budget there are many projects aimed at solving the residents' transport-related problems (parking lots, pedestrian crossings, pavements, road surface), but the recent editions were dominated by investments related to recreation areas as well as recreational, representative, sports or culturally relevant objects. This may indicate that the residents of Szczecin (leaving aside the attendance) see the need for expanding, modernizing, increasing the attractiveness and accessibility of recreational areas, which they make use of more and more frequently, and pay increasingly more attention to the quality of their immediate surroundings. Such choices contribute to shaping recreational space first and foremost on a local scale, meaning their own district (or even a part thereof), but also (by choosing city-wide projects) the entire urban area. The latter type of investment allows for the shaping and

development of recreational space in a concise manner suited to the needs of the entire community and accessible to most of its members.

Conclusions

Problems related to the functioning of urban areas, especially with the move of residents to the suburbs of cities (and the negative consequences thereof) arise to a high degree from the decreasing comfort of life in the cities and the search for more optimal living conditions on the part of the residents. One of the ways of improving life quality in cities is to create attractive and accessible recreational space which, while creating a friendly environment for leisure time activities, may impede the process of urban sprawl. Next to activities carried out to that aim by local governments, in recent years there have been investments realized within Participatory Budgets which allow for the residents' participation in that process. On the example of the projects chosen by the residents of Szczecin as part of the Participatory Budget it can be seen that the residents pay increasingly more attention to the aesthetics of their immediate surroundings and the possibility of obtaining a friendly and attractive space for their leisure time activities. Shaping recreational space in this case has a local dimension (both in the understanding of one's own district and the whole city), but over the years a methodical approach of the residents may be seen in terms of choosing projects that are to create a particular space, which is not possible within a single year (e.g. city bike, or the surroundings of Brodowski Park). This clearly contributes to creating modern recreational space that fits the residents' needs.

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THE IMPORTANCE OF LOGISTICS SERVICES FOR THE ECONOMICAL EFFICIENCY IN THE GARMENT INDUSTRY

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ABSTRACT The paper deals with the problem of the importance of the performance of logistics processes and services for the economic efficiency of sourcing strategies (local or global) in the garment industry. It presents the results of the research studies conducted by the authors in the Polish companies from the garment industry. Based on the results of the studies the electronic model of a supply chain has been made in order to estimate, what are the structure of the logistics costs what is the share of them in sales. The simulations conducted with the use of the model shown, that in present conditions, the sourcing strategies have strong impact the logistics costs. Yet relatively higher level of logistics costs in global sourcing (from low cost countries) don't make it less profitable than in sourcing locally. However even small change of purchase costs can make global supply chains unprofitable.

Introduction

Logistics is considered an important factor of economic efficiency of enterprises. The costs of logistics processes (transport, warehousing, inventory management) and logistics services can be high. Not only costs are important but also logistics performance, which influence other areas in enterprises like production or sales.

So efficiency of logistics influence overall costs of a company and incomes through a level of logistics customer service (e.g. time of delivery, punctuality) and costs of lost sales.

The garment industry is especially confronted with challenges in logistics. The demand in this market is difficult to forecast and many big companies use the strategy of ordering goods in the low costs countries, which are located far from sales markets. The question here arise, why, despite high logistics cost it has been profitable to use the strategy of global sourcing. That's why the intention of the Authors of the paper was to investigate how important in sourcing decisions logistics efficiency is. One of the goal of the study was also to investigate is the structure of logistics costs and their share in incomes and compare them with the results of the studies of other authors.

Based on the results of the studies the electronic model of a supply chain has been made in order to conduct simulations of the economic efficiency of sourcing strategies.

Literature review

The share of total costs presented in the literature vary from 7.50 to 17.08% turnovers (Table 1) and depends on a type of activity, a company size, country, what probably depend among others on geographical conditions. According to the data The Establish Davis Logistics Cost and Service Database (Table 2), transport costs are the largest share (3–4%) in incomes and the total logistics costs stand for 8–9% of sales.

Table 1. The structure of logistics costs in different countries (%)

Country	Logistic costs of production in relation to turnover	Share in turnover				
		transport	warehousing	inventories	administration	other
Finland	12.10	4.60	2.60	3.00	1.20	0.70
USA	7.50	3.79	1.73	1.79	0.19	
Poland	17.08	6.16	3.47	4.15	3.30	
Norway	14.20					

Source: own elaboration based on: Solakivi et al. (2015), Ślusarczyk, Kot (2013), Karri, Ojala (2012), Inger, Wiljar (2010).

Table 2. Logistic costs as percent share in sales

The type of cost	2010	2011	2012	2013	2014	2015
Transport	4.08	3.79	3.44	3.66	4.43	4.62
Warehousing	1.75	1.76	1.89	2.04	1.99	2.16
Customer Service	0.43	0.3	0.3	0.37	0.41	0.37
Administration	0.23	0.19	0.19	0.22	0.30	0.22
Inventory Carrying	1.79	1.73	2.05	2.11	0.22	2.19
Total logistics costs	8.28	7.77	7.87	8.41	9.34	9.56

Source: Establish Davis Database (2018).

Above data although interesting have some drawbacks. First they are aggregated data.

Second these costs are probably only estimated.

And third the so called "opportunity costs" (costs of capital tied up in inventories and lost sales) are the economic category are not identified in the traditional accounting systems.

The logistics affect the economic efficiency not only through cost but also through good logistics customer service and, consequently, higher sales and in fact the logistics customer service can be more important than costs optimization for profitability of a company (Stank, Goldsby, Vickery, Savitskie, 2003; Fugate, Mentzer, Stank, 2010).

The economical efficiency in the garment industry

Garment business has its own specificity – first of short product lifecycle, high volatility, low predictability (Marufuzzaman, Ahsan, Xing, 2009; Battistoni, Fronzetti Colladon, Mercorelli, 2013; Nenni, Giustiniano, Pirolo, 2013), long production lead time, forecasting errors (Bruce, Daly, Towers, 2004). Commercial success or failure in fashion markets is largely determined by the organisation's flexibility and responsiveness (Rayman, Burns, Nelson, 2011). In fact the difficulties in predicting demand has led big clothing companies like H & M and Zara to focus on the improvement of responsiveness in their supply chains (De Carlo, Tucci, Borgia, 2013).

The organization of the logistics processes in the garment industry depends to a great extend on the geographical localization of production of clothes. The largest Polish clothing companies, such as LPP SA and Redan Capital Group as well as their foreign competitors operating in Poland (eg H & M or Grupa Inditex) order production mainly in Far East (Bangladesh and China). But for several years there has been a tendency to increase the share of locally or regionally ordered production of clothes.

The Global Fashion Industry's average EBITA was apx. 9.8% in 2014 (McKinsey & Company, 2015). The average Retailer's Gross Margins in American companies on clothing are estimated on the level of apx. 47.02%, and Net Margins – 5% – 7.6% in 2013. In 2013, the average net profit margin amongst the 44 largest Apparel & Accessories Retailers world-wide was 7.6% (National Retail Federation, 2015). Similar financial results are achieved by Polish clothing companies among by LPP SA (Table 3).

Table 3. Financial results of LPP SA

Years	2013	2014	2015	2016	2017
Sales revenues	4 116 302	4 769 288	5 130 353	6 019 046	7 029 425
Own cost of sale	1 707 151	1 976 788	2 387 524	3 085 236	3 335 184
Own cost of sale/sales (%)	41.5	41.4	46.5	51.3	47.4
Gross profit (Loss) on sales	2 409 151	2 792 500	2 742 829	2 933 810	3 694 241
Sales costs	1 604 796	1 942 937	2 012 420	2 405 007	2 783 033
Cost of sale/sales (%)	39.0	40.7	39.2	40.0	39.6
Overall costs	154 409	205 411	179 247	203 799	241 804
Other operating cost	68 116	80 938	72 704	138 007	130 395
Profit (loss) from operating activities	615 627	609 103	502 689	226 421	578 434
Operating profit margin (%)	15.0	12.8	9.8	3.8	8.2

Source: own elaboration based on reports on the materials of the LPP SA Capital Group.

The biggest share of costs were the "own cost of sale" (41.5–47.4%) and "sales costs" (around 40,0%). Similar cost and margins structure also occurs in many of other companies listed on the Warsaw Stock Exchange (Table 4). Basing on these data the simulations have been conducted, which show, that even 5% increase of "costs of sales" have considerable impact on margin netto (reduction 14–56%). Costs of logistics are included in the "Cost of sales", which are the costs of distribution of goods.

Table 4. Decrease of the margin as a result of 5% increase of cost of sales of chosen listed companies from garment industry

Name of a company	Sales revenues	Own cost of sale/sales (%)	Margin netto (%)	Reduction of margin (%)
Esotiq & Henderson SA	124,224	45	4.0	–56.4
Primamoda	35,838	74	24.9	–14.8
Bytom SA	152,911	38	8.3	–23.0
Gino Rossi	284,748	42	4.5	–46.9
Monnari Trade SA	231,773	41	9.3	–22.1
Vistula	598,602	34	8.5	–20.2
LPP	6,019,046	40	3.8	–53.1

Source: own elaboration on the basis of data from the financial statements of companies

In order to estimate importance of the efficiency of logistics processes and services on the financial performance of companies from garment industry an electronic model of a supply chain has been elaborated by the authors of the paper.

The economical efficiency of supply chains in garment industry

The model allows to calculate profitability of two strategies: global sourcing (sourcing from countries of low costs of production like Bangladesh) and local sourcing in Poland.

Maladjustment of production volume to demand results in the costs of the lost sales when an actual demand would be higher than the forecasted or when it is lower and some part of the goods have to be sold in outlets for lower prices. The model takes into consideration both of these scenarios.

Data used for calculations were partly collected from companies during a research conducted by the Authors of the paper, from transport and logistics operators, from the scientific literature and publicly available data on rates for logistics services (transport, warehousing).

The data concerning parameters of deliveries have been obtained mainly from LPP SA (joint-stock company). The yearly number of items sold by this company is 14 mln pcs., and daily to a logistics centre in Poland 20–22 containers come from Far East in which there are about 20,000 pieces of clothes per container (Table 5). The yearly incomes in 2017 it was 7 bln PLN, what means that one item has a retail value on average of over 50 PLN.

Two scenarios concerning predictability have been taken into consideration in the model – the actual demand was: 1 – 10% lower, 2 – 10% higher than the forecasted.

The assumptions for the first scenario are in the Table 5. Apart from this it is assumed, that in case of a local supply goods are delivered on a daily basis, and when globally sourced twice a week, but time of a delivery (by ship) – 45 days.

Table 5. Parameters of purchased goods used for simulations (90% predictability of demand)

Average retail price (PLN/pcs.)	55.0
Purchase price in global supply (PLN/pcs.)	17.0
Purchase price in local supply (PLN/pcs.)	29.0
No of products in a unit (items/unit)	20,000

Source: own study based on market data.

Results

The results of the simulations in both scenarios (actual demand 10% lower and 10% higher than the forecasted) are as follow (Tables 6 and 7):

a) the total logistics costs are much higher in the global supply than in the local one – 13.4% of sales, when actual demand is lower and 3.7%, when it is higher, while in local supply – 0.5% in both scenarios;
b) despite this total costs of supply (including logistics and purchase costs) are lower in case of the global supply because the main factor are purchase costs (43.1–53.1%);
c) the costs of lost sales stand for very big share of total logistics costs in scenario 2 (10,0%), what confirm, that logistics performance and the logistics customer service are very important factor of the economic efficiency, when sales are difficult to predict;
d) on the second place there are costs of transport (about 3% of sales), which agrees with the results of other authors' research.

They may explain, why despite high logistics costs in global supply chains it is profitable to source in the low costs countries. The costs of production in this countries are so low, that even if actual demand is lower than forecasted (–10%) and goods have to be sold at a discounted price this is strategy still will be profitable.

On the other hand however, they also may explain, why presently the production is coming back to Europe and to Poland – even a small increase of the costs of production in the Far East decrease considerably the profitability of this strategy. In case of lower margins, the share of logistics costs is increasing and have greater impact on profits.

It must also be emphasized that simulations have been conducted for two scenarios, in which a actual demand differs from the forecasted demand only by 10%. Demand fluctuations can be even greater and then the impact of the logistics performance on the profitability would also be greater.

Table 6. Costs of supply of supply strategies

Predictability – actual demand	90%		110%	
Strategy of supply	local supply	global supply	local supply	global supply
Costs (PLN/year)	1,000	1,000	1,000	1,000
Purchase costs	3,654,000	2,380,000	4,466,000	2,380,000
Fees and duties	–	911,376	–	911,376
Lost sales	–	11,200	–	764,400
Transport from a supplier	9,265	199,144	11,324	199,144
Transport in distribution	18,529	18,529	22,647	22,647
Inventories	1,514	30,512	1,851	30,512
Warehousing	1,902	4,235	2,082	4,235
Total logistics costs	31,211	263,621	37,903	1,020,938
Total suppply costs	3,685,211	3,543,797	4,503,903	3,547,914
Margin of net profit (%)	4.1	8.2	9.0	12.4

Source: own calculations based on the market data.

Table 7. Share of logistics for different values of goods (%)

Predictability – actual demand	90		110	
Strategy of supply	local supply	global supply	local supply	global supply
Purchase costs with fees and duties	53.1	46.8	53.1	43.1
Lost sales	0.0	0.2	0.0	10.0
Transport	0.4	3.1	0.4	2.9
Inventories	0.0	0.4	0.0	0.4
Warehousing	0.0	0.1	0.0	0.1
Total logistics costs	0.5	3.7	0.5	13.4

Source: own calculations based on the market data.

Conclusions

The conducted simulations confirmed opinions expressed by some authors, that logistics performance is important factor of economic efficiency in the garment industry. Possibility to react quickly to demand in this market plays vital role, more than possibility to decrease logistics costs. This can be a surprise because of the distances are long and value of clothes is low (high share of logistics costs in the value of purchased goods). The explanation are big differences between retail price of clothes and production costs in the low costs countries.

Results of calculations conducted by Authors of the paper partly agrees and partly differs from the ones presented in the literature. It has been confirmed that, if the costs of the lost sales are not included, transport costs are the largest share of total logistics costs. What's more the share of the transport costs is similar to the share of these costs in different publications. The other costs – warehousing and inventory management and lower than in the literature.

The authors of the paper contributed also by estimating possible costs of the lost sales, usually don't identified in the literature.

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THE EUROPEAN UNION FUNDS IN THE IMPLEMENTATION OF THE CONCEPT OF SUSTAINABLE DEVELOPMENT IN THE CONTEXT OF FINANCING PROJECTS RELATED TO THE RE- USE OF EUROPE'S CULTURAL HERITAGE

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ABSTRACT The subject of this article is to bring closer to readers, especially the local and regional authorities (as beneficiaries of EU funds) knowledge about opportunities offered by the cultural heritage in the implementation of the sustainable development principles in all dimensions: economic, social, environmental and cultural. Local authorities are often unable to cope with the proper use of available resources of cultural heritage, and although the functioning and development of cities and regions is largely based on the principle of sustainable development (at least according to development strategies), it is often difficult for local authorities to see the opportunity in available heritage to create benefits for society, economy, environment and culture in a given area. And although the local governments are aware of the potential for funding from the European Union in various areas, they often overlook the possibility of obtaining funding specifically related to the cultural heritage. This is a barrier in the implementation of UE policies related to cultural heritage in Europe especially in countries of Central and Eastern Europe. The article also acquaints the readers with the European Union policy on the cultural heritage of Europe and the financing of projects related to its use in programming period 2014–2020.

Introduction

European cultural heritage is a very important element in the lives of Europeans. The European Union countries abound in various sorts of monuments, places of worship or unique features of nature which (because of their various values) nations decide to protect. This protection most often takes the form of legal protection and conservation and for many regional and local authorities it is a problem, as, in their concept, these are cost driving

factors (e.g. in the case of monuments that must be maintained and must not be destroyed but they do not fulfil any role in creating of added value apart from their historical value) or a factor significantly limiting the expansion of cities (e.g. when in their area is a zone protected by law). Local authorities are often unable to cope with the proper use of available resources of cultural heritage, and although the functioning and development of cities and regions is largely based on the principle of sustainable development (at least according to development strategies), it is often difficult for local authorities to see the opportunity in available heritage to create benefits for society, economy, environment, and culture in a given area. And although the local governments are aware of the potential for funding from the European Union in various areas, they often overlook the possibility of obtaining funding specifically related to cultural heritage. This is a barrier to the implementation of UE politics related to cultural heritage in Europe especially in countries in central and eastern Europe.

The purpose of this paper is to make aware the interested stakeholders (including local governments, as beneficiaries of EU funds), the importance and potential of having a variety of assets in the form of a broadly understood cultural heritage and make them aware that Europe's cultural heritage is a very important stimulating factor for smart, sustainable growth not only at the level of cities or regions but also at the level of the Member States and the whole European Union.

What do we mean by Cultural Heritage?

In the literature of the subject or in various types of studies, we encounter a different interpretation of the broadly understood cultural heritage. For many years this concept has evolved. For the purposes of this study, the most accurate, most concise, and most accurately to the subject of our deliberations, the definition can be found in Wikipedia, which cultural heritage defines as follows:

Cultural heritage is the legacy of physical artefacts and intangible attributes of a group or society that is inherited from past generations. Cultural heritage includes tangible culture (such as buildings, monuments, landscapes, books, works of art, and artefacts), intangible culture (such as folklore, traditions, language, and knowledge), and natural heritage (including culturally significant landscapes, and biodiversity) (Wikipedia, 2017).

An interesting interpretation of cultural heritage cites a report entitled: "Dziedzictwo kulturowe ma znaczenie dla Europy. Skrót raportu": Cultural heritage is part of the past that we choose in the present for our contemporary economic, cultural, political and social goals and which we choose to pass on to future generations. Heritage includes works of man and nature with special cultural or scientific value for the development of civilization. It is always subject to contemporary interpretation, which gives it a new meaning. Traditionally, they are divided into cultural and natural, and the cultural heritage in turn – material (movable and immovable) and intangible (Międzynarodowe Centrum Kultury, 2015, p. 11).

Cultural property includes the physical, or tangible cultural heritage, such as artworks. These are generally split into two groups of movable and immovable heritage. Immovable heritage includes buildings (which themselves may include installed art such as organs, stained glass windows, and frescos), large industrial installations or other historic places and monuments. Moveable heritage includes books, documents, moveable artworks, machines, clothing, and other artefacts, that are considered worthy of preservation for the future. These include objects significant to the archaeology, architecture, science or technology of a specified culture.

Intangible cultural heritage consists of non-physical aspects of a particular culture, more often maintained by social customs during a specific period in history. The concept includes the ways and means of behaviour in

a society and the often formal rules for operating in a particular cultural climate. These include social values and traditions, customs and practices, aesthetic and spiritual beliefs, artistic expression, language and other aspects of human activity (Wikipedia, 2017).

As a natural heritage, according to Article 2 of the UNESCO World Heritage Convention we consider: Natural features consisting of physical and biological formations or groups of such which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty (UNESCO, 1972, p. 2).

The above definitions indicate that cultural heritage is an important part of the surrounding us reality and we encounter it very often in our daily lives.

Areas of cultural heritage influence in the context of sustainable development principles

Cultural heritage, undoubtedly, is an important element of the attractiveness of regions and cities, especially those with recognized and well-known heritage. For cities and regions with less recognized heritage, using it and achieving positive results in line with the sustainability goals may pose some difficulties, especially in the initial phase of adaptive re-use planning and applying for EU funding. Most often, regional and local authorities, when planning all activities, including those related to the use of cultural heritage, focus their attention mainly on achieving economic results. On the one hand, it is understandable but it is important to remember that the remaining elements of the idea of sustainable development (social, environmental, cultural) are equally important and indirectly contribute to many benefits, including the economic area (e.g. visual attractiveness of place which creates culture attracts also potential tourists, investors or the artistic community, which undoubtedly has an impact on the economy of this place). Heritage cannot be valued only economically, heritage is also about development (Mkadem, Zakriti, Nieuwenhuysen, 2018, p. 4). There is the need for consideration of the benefits of preservation and contemporary use of cultural heritage from different points of view, i.e. not only aesthetic and historical heritage, but also from the perspective of development and implementation of public policies and strategies, including efficient use of public funds and in the context of overall socio-economic development (Murzyn-Kupisz, 2010, p. 19).

Elements of sustainable development in case of cultural heritage interpenetrate and influence each other.

Just as the importance and the way of obtaining economic benefits through the use of cultural heritage is clear and understandable for local authorities the remaining areas of influence (their importance and their effects) may be considered as less important or difficult to obtain. It should be borne in mind, however, that the procedure for applying for EU funds for the adaptive re-use of cultural heritage most often needs to show in the applications that the project will contribute to the realization of sustainable development in all its areas. It derives, for example, from the "EUROPE 2020. A strategy for smart, sustainable and inclusive growth" issued by the European Commission which one of the priorities is sustainable development – supporting a resource-efficient economy (European Commission, 2010, p. 10) or from one of the tools for the implementation of this strategy – the Horizon 2020 Framework Program, with a budget of € 80 billion for 2014–2020.

It is therefore worth mentioning here a noteworthy positive example of the impact of heritage on the environmental area, as presented in the report „Cultural Heritage counts for Europe. Full report": Reusing and repairing existing building stock has clear environmental benefits, with increasing evidence that the level of energy

efficiency of pre-1890 public buildings at least matches, and sometimes exceeds, that of the most sophisticated modern buildings. From an environmental standpoint, the embodied energy of existing buildings is one of the most compelling arguments for preserving them. Embodied energy is a quantitative measure of the energy consumed during the extraction, manufacture, and transportation of materials as well as the construction phase. When a building is demolished, the environmental cost includes the lost embodied energy and increase in landfill waste. (...) In addition, the outcome of the last meeting of the ECTP in June 2014 in Brussels defines the environmental impact of built heritage on Europe's sustainability as follows: minimising unnecessary demolition of buildings, reducing transport impact, connecting with the natural environment. (...) Maintaining existing structures contributes to reducing urban sprawl, prolonging the physical service life of buildings and building parts, supports waste-avoidance and preserves embodied energy (CHCfE Consortium, 2015, p. 80).

The significance and influence of cultural heritage in of particular areas related to sustainable development are presented in Figure 1.

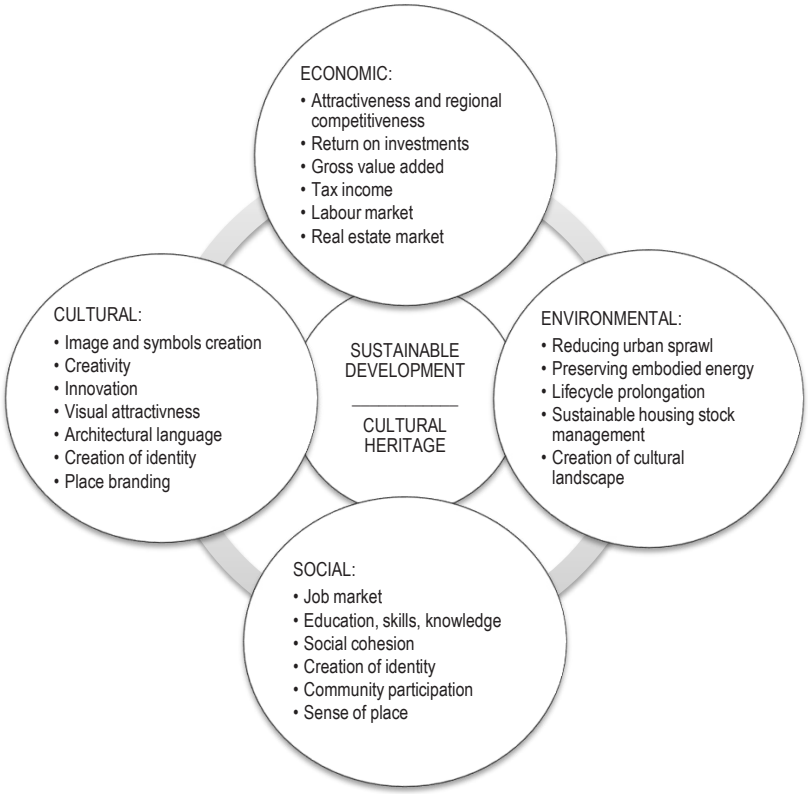


Figure 1. Areas of cultural heritage in the context of sustainable development idea

Source: own, based on the report: Cultural heritage counts for Europe. Full report, CHCfE Consortium, 2015.

The indisputable fact is, that around common cultural heritage in Europe the entire tourism industry is growing, changing the development and employment structure of many cities and regions in Europe (Jurkiewicz-Eckert, 2003, p. 94). Rich cultural heritage is one of the important resources of Europe, so it is worth to use its potential.

The European Union policy on the cultural heritage of Europe and the financing of projects related to its adaptive re-use

As mentioned above, the European Union supports activities related to the adaptive re-use of the cultural heritage of the European Union countries. This has been identified in many documents issued by EU institutions. One of the essential documents in which the importance of European cultural heritage is mentioned is the Preamble of the Treaty on the European Union whose signatories are "inspired by the cultural, religious and humanist heritage of Europe". Article 3, paragraph 3 of the Treaty on the European Union stipulates that the European Union "... respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is safeguarded and enhanced" (Official Journal of the European Union, 2016, pp. 15, 17). The importance of Europe's cultural heritage has also been defined in Article 167 of the Treaty on the Functioning of the European Union. This article provides the following: "The Union shall contribute to the flowering of the cultures of the Member States while respecting their national and regional diversity and at the same time bringing the common cultural heritage to the fore" (Official Journal of the European Union, 2016, p. 121).

Cultural heritage is a priority in the actions of the Council of the European Union. In the Resolution of the Council of 16 November 2007 on "The European Agenda for Culture" the Council stressed, that "... culture and creativity are important drivers for personal development, social cohesion, economic growth, creation of jobs, innovation and competitiveness" (Official Journal of the European Union, 2007, p. 1).

One of the specific objectives of "The European agenda for culture in a globalizing world" issued by The European Commission is: Develop creative partnerships between the cultural sector and other sectors (ICTs, research, tourism, social partners, etc) to reinforce the social and economic impact of investments in culture and creativity, in particular with regard to the promotion of growth and jobs and the development and attractiveness of regions and cities (European Commission, 2007, p. 10).

In its other Communication "Towards an integrated approach to cultural heritage for Europe" cultural heritage is recognized as a catalyst for creativity and growth. It points to opportunities and the need to exploit the potential of cultural heritage to stimulate local and regional development. The Communication stated that: Conserving, promoting and managing cultural heritage is currently well supported under the EU Structural and Investment Funds (ESIF). In 2007–2013, the European Regional Development Fund allocated € 3.2 billion for protecting and preserving cultural heritage, € 2.2 billion to develop cultural infrastructure and € 553 million for cultural services, which also benefited cultural heritage. In 2014-2020, ESIF investments in heritage will remain eligible, under certain conditions, through direct funding, but also through investment in urban regeneration, sustainable development and support to small to medium-sized enterprises (SMEs) (European Commission, 2014, p. 10).

The European Regional Development Fund offers funds to cover a wide spectrum of activities in the public and private sectors (in particular SMEs) and non-profit pursuing investments that contribute directly to the fund's objectives and investment priorities. Investments in small-scale cultural infrastructure as part of a territorial strategy should contribute both to the development of endogenous potential and to the promotion of social inclusion and

quality of life, particularly among marginalized communities, by improving their access to cultural and recreational services in both urban and rural contexts.

European Agricultural Fund for Rural Development offers support for the preservation and enhancement of the rural heritage (in 2007–2013 allocated to them € 1.2 billion).

European Maritime and Fisheries Fund offers funding for projects implemented by local communities on cultural heritage in fishing areas as well as maritime cultural heritage.

Urban revitalization projects, including places where cultural heritage sites or places of cultural importance are located, may also benefit from financed engineering mechanisms such as equity loans or guarantees during the programming period 2014–2020.

In addition, the European Commission supports the development of responsible and sustainable tourism, including products related to cultural and industrial heritage, as well as activities related to giving a new role and importance to traditional skills and crafts. Supports actions to increase the importance and attractiveness of cultural professions and to provide greater opportunities for lifelong learning. In this case, there is a possibility to use the resources offered by the European Social Fund.

Because of the limitations of this publication, this is only a brief overview of the European Union policy concerning cultural heritage and the possibility of obtaining funding for various projects associated with it.

Conclusions

Cultural heritage is undoubtedly an important factor in the development of cities, villages, and regions. It is a key element of international dialogue not only on the European Union but on a global scale. Humanity already in the second half of the twentieth century launched an integrated policy of heritage protection. And despite the fact this policy was significantly limited and focused mainly on protecting of material heritage from degradation and destruction, it launched an important for humanity process which continues today and will continue in the future. Europe's citizens not only appreciate the value of cultural heritage but also seek the best opportunities to use it for economic, social, cultural and environmental purposes. They no longer perceive this good only in the context of the rising costs of maintaining and legal protection. They see in it the sources of income, opportunities for social inclusion, job creation, preserving of lost jobs and crafts, the strengthening of social ties, the protection of the environment and many other benefits.

The EU authorities not only stress the importance of the heritage and support its protection and economic use, but also provide the opportunity to finance a broadly understood heritage from a variety of sources and programs.

Therefore, it is worth considering whether the old little church at the crossroads or old already closed and abandoned factory will not give a new meaning to the village, the city or the region. But this is a task for local governments as well as for the local communities, SMEs, artists and other people and organizations that can contribute to the creative re-use of cultural heritage.

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COMMUNICATION WITH CLIENTS USING ELECTRONIC MAIL – ANALYSIS OF THE EXPECTATIONS OF VARIOUS MARKET SEGMENTS

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Abstract This article is a part of the series of publications on written communication. The aim of the article is to evaluate the possibilities of electronic communication with individual market segments and to identify key elements of e-mail communication and to adapt them to the preferences of clients. Three segments of consumers were identified in the research – young people (up to 40 years old), mature ones (over 40 years of age) and corporate consumers. Each of these groups has different habits regarding communication, which they transfer to relationships with suppliers of goods and services. Older people communicate with energy supplier mostly by mail or by visiting the customer service point personally. Younger people choose electronic communication or via the hotline. Entrepreneurs' representatives most eagerly handle matters by e-mail.

Introduction

Corporate correspondence, especially e-mail, should be personalized, which is often difficult to achieve with a large scale of the company's operations. Large organizations recognize the need for a deeper analysis of changes in customers' purchasing behavior, understanding their preferences and written correspondence, to adapt this form of communication to the expectations of their recipients.

From the point of view of effective communication, it is important to form the message so that it is properly understood, to determine what permanent elements such correspondence should contain and how to plan it visually. For this reason, qualitative research was carried out in cooperation with a Polish large energy company (electricity seller, one of the five largest energy sellers in Poland). An energy company, which has about 2 million customers, sends thousands of traditional letters every day, and every employee dealing with electronic correspondence responds to dozens of customer inquiries. In traditional correspondence, but also e-mail correspondence, it makes it necessary to use ready-made response templates that employees can additionally modify. It is important that these templates are professionally prepared, easy to personalize and, above all, adapted to the changing expectations of customers. More and more consumer inquiries are addressed via e-mail or inquiries from the e-BOK (Electronic Service Office). Then the company's response should also be sent via e-mail.

This article is a publication from the series on written communication. The aim of the article is to evaluate the possibilities of electronic communication with individual market segments and to identify key elements of e-mail communication and to adapt them to the preferences of clients. Three segments of consumers were identified in the research – young people (up to 40 years old), mature ones (over 40 years of age) and corporate customers. The division into segments results from to the specificity of the energy industry, and the large age range of young people is due to the fact that people starting their own households in Poland are mostly people aged 30 years.

Literature review

Communication research is an important area of studies related to the activities of the organization, because properly conducted communication with clients, but also with co-workers enables efficient running of the company and effective sales (including Bavelas, Barret, 1951, pp. 366–371; Simon, 1976, pp. 157–162; Darf, Legel, 1984, pp. 191–233; Engel, Warshaw, Kinnear, 1998; O'Sullivan et al., 2005; Murphy, Sashi, 2018, pp. 1–12; Hossain, Chonko, 2018, pp. 221–234).

Stankiewicz draws attention to the important aspect of written communication. Communicating between people in this way allows the use of words that constitute about 7–10% of all messages transmitted. Therefore, the sender of the message has definitely less opportunities to influence the recipient (Stankiewicz, 1999, p. 111). Written communication has the basic advantage, i.e. the permanent preservation of the information contained therein, and thus it is easy to archive (Trocki, 2012, p. 321). Written communication is appropriate when it is necessary to provide precise information, and also if the parties are unable to meet directly.

Written communication in organizations is classified as formal communication. Formal communication is usually based on written letters and documents, while informal communication is based on direct meetings (Darf and Legel, 1984, pp. 191–233). Researchers have noted that formal communication is needed to perform specific procedures, while informal communication is necessary to develop a business (Murphy, Sashi, 2018, pp. 1–12; Hossain, Chonko, 2018, pp. 221–234.).

It is worth noting that written communication is a skill that can be learnt in the education process. In the era of electronic communication, when many matters are discussed in e-mails, it becomes the basic competence of employees. Written communication is one of the basic (generic) business skills (Calma, 2013, pp. 35–50). Companies pay more and more attention to this skill, also during the recruitment process of potential employees (Krapels, Davis, 2003, pp. 90–96). To meet these expectations, universities also try to prepare students, including written communication to one of the key business skills (Addams, Allred, 2015, pp. 250–263).

The specificity of e-mail communication

The literature discusses three basic models of marketing communication, the use of which is conditioned by the specificity of the company's operations, resources possessed, market situation and customer relations. These are: mass communication, interpersonal communication and communication in hypermedia computer environment. The first two models are traditional in nature, while the third model combines the possibilities of these previous models, and additionally enables the groundbreaking introduction of changes in the rules of marketing communication. The message itself is more varied – it can have a multimedia form, i.e. text combined with additional visual forms (such as: drawing, animation, film), but also sound (music, read message). The content and form of the message is changing qualitatively, but the roles of the participants and the direction of information flow are also subjected to alterations (Blythe, 2002, pp. 13–15; Wiktor, 2013, p. 42; Kramer, 2013, p. 11; Taranko, 2015. p. 36; Rosa, Słupińska, Ostrowska, Gracz, 2018).

Email communication became popular due to its key advantage: easy and rapid exchange of information that simplifies communication in large and geographically distributed organizations (Sproull, Kiesler, 1991, pp. 84–91). Another advantage is its low cost and the ability to accurately describe the case. Communication via e-mail is also related to threats. Sending emails to many recipients requires only a modicum of effort since they do not have to be printed out and delivered to a post office. The consequence of this increased quantity of emails is obvious: inboxes become jam-packed and result in a confusing mixture of relevant and irrelevant emails, which hinders efficient information processing (Soucek, Moser, 2010, pp. 1458–1466; Whittaker, Sidner, 1997, pp. 71–83).

Compared to business letters, email communication is often considered a spontaneous and less formal communication medium (Nantz, Drexel, 1995, pp. 45–49). This notion of email communication often leads to superficially and ambiguously formulated messages that fail to give the recipients enough information to act upon, and therefore fosters misunderstandings (Burgess, Jackson, Edwards, 2005, pp. 71–83). Researchers point out that e-mail communication can cause misunderstandings because e-mail communication rules are not well developed and are not generally accepted (Kiesler, Siegel, McGuire, 1984, pp. 1123–1134). One example of ambiguity due to unclear communication rules occurs when senders expect recipients to respond to a message within a short time frame (Markus, 1994, pp. 502–527; Renaud, Ramsay, Hair, 2006, pp. 313–332; Soucek, Moser, 2010, pp. 1458–1466.).

Persons communicating in writing must be able to organize and clearly express their thoughts and adapt them to the specifics of formal or informal correspondence. This requires matching the message, vocabulary and form to the circumstances and the recipient, to communicate with its addressees in the best possible way (Simerson, Venn, 2010, p. 197).

Method

The presented research results were carried out in Szczecin, in the focus workshop in the Service Inter Lab center from 13.06 to 6.07.2017. The research team responsible for the scenario of the research, selection of respondents and moderation of interviews included: G. Rosa, I. Ostrowska, L. Gracz, K. Słupińska. The energy company provided sample templates of written communication and participated in adjusting the scenario of the research to the specifics of the industry. People using the services of the energy company, selected in a targeted

manner were the respondents. Differentiating criteria included: gender, age, education, as well as the type of customer – individual or business.

In the first stage of the study, three focus group interviews (FGI) were conducted – two among individual consumers divided into young people (up to 40 years of age) and mature people (over 40 years) and one of the company's representatives. During the second stage of the study, i.e. the verification stage, two research groups were accepted – individual persons and corporate customers. Each group interview (FGI) was attended by 7–8 participants, this is the optimal number due to the duration of the study and possibility of an effective examination.

The objectives of the focus studies and individual interviews were as follows:

Objective 1: Analysis of customer behavior and preferences regarding written communication.

Objective 2: Analysis of the current state of written communication in visual terms.

Objective 3: Analysis of selected elements of the written message in terms of its affordability.

The letters presented during the research were, for example, personalized letters and e-mails, prepared on the basis of templates from the energy company, which concerned the most common topics in correspondence with clients.

Results

Segment of mature consumers

Individuals who were considered mature in the study (over 40 years of age) can be divided into additional segments due to the use of respondents aged 35 to 44.87% of people use the network, and only 45% of people from 45 to 54 years of age use the Internet. Over half of people aged 55-64 and three-quarters of the oldest Poles (65+) do not use the Internet at all (CBOS, 2017, p. 2).

In the group of mature clients after the age of 40, the barriers to Internet use are noticeable. The respondents prefer to get a paper invoice. In this group, many people pay their bills in a very traditional way, i.e. in post offices. In this group of respondents, only a few people aged 40–60 still pay bills via electronic banking, but they also have a reluctance to use an electronic service office. Even the login process on the site is a problem for older people – they are afraid to provide their data.

Older people who use the Internet, consider the form electronic communication with the company as convenient. Due to the short, specific form of e-mails, this form of communication is even preferred. An important advantage of e-mails is the possibility of archiving them. Most older respondents stated that they do not use e-mails in formal correspondence with companies and prefer to send a traditional letter, due to greater certainty that the message will reach the recipient and the opportunity to send a registered letter with confirmation of receipt.

The respondents also evaluated sample letters and e-mails from the energy company. In comparison to traditional written communication, e-mail correspondence has been very positively evaluated, especially the conciseness of the information provided and its affordability. In the company being researched, a separate department is responsible for electronic correspondence, people employed in it are trained so that the correspondence would not be too extensive.

The presented e-mails contain graphic ads, which were also evaluated – especially if they do not disturb the reception of the message content. For the respondents, it is preferable that the graphics with advertising offers are active so that after clicking you can enter and read the details of the offer on the website. Thanks to the appropriately worded e-mail subject, credible sender's address, and the headline with the logo of internet communication. There

is a greater diversity in the examined age group. Among the energy company, participants believe that it is easier to identify the sender and they feel safer.

Segment of young customers

Internet usage is common among the youngest Poles 18–24 years (100% Internet users) and almost universal among people aged 25–34 (96%). Among respondents from 35 to 44 years it is 87% of people (CBOS, 2017, p. 2).

Young people prefer e-mail correspondence because of its virtual character and the possibility of checking it from different places. It is also easier to find it in the e-mail box and later reach the given information. Communication through this channel is faster and cheaper. The only advantage of the paper magazine is that it contains stamps, subject, customer number, which are included in the content of the letter.

As a start of the e-mail, you can put the formula "thank you for contact", which is perceived positively by the young. However, in the case of unpleasant matters for the client – e.g. complaints, it is worth to refer directly to the matter and no longer thank for the contact. The content of the e-mail should be short and written in a simple language, with an indication of what steps the client should take or what is the outcome of the case. The signature of the person writing the e-mail should be on the left side, which is generally accepted in electronic correspondence. Each customer application, which is sent from eBOK or from a form on the website, should also be made available to this customer.

Corporate customer segment

The business client can be very different target groups – from large organizations from the public sector, through large and medium-sized companies to representatives of the SME sector. Consumers from the business segment are considered extremely demanding: and well-educated. They have the specialist knowledge necessary to properly assess the offer. They are constantly monitoring changes on the market, and the product search begins with a comprehensive analysis of available solutions. The business consumer should be treated as a partner, which is why the value of the ability to conduct dialogue with it is strongly emphasized (Urbaniak, 1999, pp. 14–21).

Entrepreneurs prefer electronic correspondence, they are eager to use this form of communication, because it improves the process. The use of this form of communication between companies allows for better time management. Rice and Bair (1984) believed that the use of electronic media would increase both personal and organizational productivity. The respondents appreciate that in this type of communication they decide when they open the e-mail, no one interferes with their schedule of the day and they do not have to wait on the infoline to learn something. However, this kind of correspondence should benefit from all amenities for clients. For example, an e-mail with an invoice attached – the content should contain short information about the amount to be paid, payment date and a link to the online payment form.

The respondents were presented with an example of an e-mail from an energy company the upper part of contained an advertisement encouraging the use of e-BOK. According to the respondents, the pictures with the advertisement are too big, they do not always open and then there is empty space in the content, which does not look professional. The question whether such an e-mail could be treated as an advertisement and deleted was answered that it is possible. However, in the case of electronic messages, the subject of the message is very important, depending on whether the e-mail with the advertisement is not treated as spam or strictly advertising

message. There is a suggestion to place an ad below the relevant content of the message so that it does not interfere with the reception of the most important content.

Conclusions

E-mail correspondence contains permanent elements relevant to the addressees. The first element indicated is the subject of the e-mail, which should be formulated briefly and clearly to inform what the correspondence relates to. The content of the e-mail should be short and written in a simple language, with an indication of what steps the client should take or what is the outcome of the case. The signature of the person writing the e-mail should be on the left, which is generally accepted in electronic correspondence. Each customer application, which is sent from eBOK or from a form on the website, should also be known to this customer. In the case of electronic communication, the time of responding is important as the respondents emphasized that they expect an answer to the email within 1–2 business days.

In correspondence in the hypermedia environment, the company should use all amenities for clients. E-mails to customers should be sent from the address with the possibility of replying them so that the customers do not have to look for an address on the company's website. E-mail with attached invoice should contain short information about the amount to be paid, payment date and a link to the form allowing online payment. A graphic ad may be included in emails, but it must be a link to the page with the details of the offer. If the graphic with the advertisement is placed on the top of the message, then the respondents notice the risk of not reading the message. For this reason, they suggested that promotional content may be on the side of the message or under the right message, always with the possibility of automatic redirection to the source page.

From the company's point of view, the electronic communication channel is first of all cheaper, more environmentally friendly and simplifies management processes (preparation of printouts, packing letters and sending them). However, taking into account customer expectations, electronic communication channel is only possible to use in certain market segments. Young people (up to 40 years old) and entrepreneurs consider this communication channel to be the right one because of their comfort and habits. Meanwhile, older people are of the opinion that communication with companies should take place in a more traditional way. They are concerned about the lack of material evidence in electronic communication and the risk of transferring their data to unknown entities. It can be anticipated that in the coming decade more and more people will also benefit from this type of communication in this age group, which is due to the fact that current young people will enter adulthood and their habits will not change in this respect.

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GENERAL INSPECTOR OF FINANCIAL INFORMATION AS AN ANTI-MONEY LAUNDERING BODY

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ABSTRACT

The article attempts to indicate the role and importance of the General Inspector of Financial Information (GIFI) as one of the main authorities limiting money laundering in Poland. Considerations began with the definition of money laundering under Polish and international law. Next, the phases and methods of money laundering were specified and the ways of limiting the above-mentioned practices were presented. The next part discusses in detail the functions and tasks of the GIFI. Attention was paid to the scope of activities and units cooperating with the GIFI within the framework of the fight against money laundering in Poland were indicated. A summary of the consideration has been presented in the final conclusions.

Introduction

Organized crime is a criminal phenomenon that occurs on an international scale and it includes not only the collection of individual crimes, it is also characterized by a complex form of antisocial behaviors. It is a phenomenon known for a long time, occurs in many countries, in various forms, and the subject of its interest is various areas of socio-economic life. Along with the socio-economic progress, criminal phenomena have intensified. They have

a source in the activities of organized crime groups that legalize their income from criminal activities, such as financial and tax frauds, drug trafficking, arms trafficking or prostitution.

The phenomenon of money laundering is very difficult to control, especially in certain types of business activity. Skillful overstating of revenues enables to enter illegally earned cash into the general trading system. This can be achieved by, inter alia, establishing a business with cash trading, strictly in service. In Poland, the General Inspector of Financial Information (GIFI) is the central element of the national system of counteracting money laundering and terrorism financing. The legal basis for his activity is the Anti-Money Laundering and Terrorism Financing Act of 16 November 2000 (Ustawa o przeciwdziałaniu..., 2000). The GIFI supervises the Polish Financial Intelligence Unit (PFIU), to which all information about suspicious transactions flows. Thanks to this, a system of fighting against criminal activity, which launders money, is formed. Due to the international dimension of money laundering and terrorism financing, the PFIU exchanges information with foreign financial intelligence units.

The aim of this article is to present the practice of money laundering with particular emphasis on the activities of the GIFI in the aspect of counteracting the above-mentioned practice.

The money-laundering phenomenon

The money-laundering phenomenon was first noticed in the 1920s in the United States. The mafia led by Al Capone profited from the illegal activity connected with, among others, smuggling and sale of alcohol. In order to hide the fraudulent activity, members of the criminal group were carried out legal business activities, i.e. laundries. The incomes obtained from this criminal activity could be freely added to takings in order to hide their true origin.

In the Polish law, definitions of "money laundering" can be found in the Act of 16 November 2000 on counteracting money laundering and financing of terrorism. Article 2 point 9 of this Act determines money laundering as intentional proceedings connected with:

a) exchange or transfer of property values derived from a criminal activity or from participating in such activity, in order to hide or conceal the unlawful origin of these property values or the provision of assistance to a person, who participates in such activities in order to avoid legal consequences of such activities;
b) hiding or concealing the true nature of property values or rights associated with them, their source, place of storage, disposal and the fact of their movement, knowing that these values are derived from criminal activities or participation in such activities;
c) acquiring, taking possession or using property values derived from criminal activities or participation in such activities;
d) cooperating, attempting to commit, aiding or abetting in the cases of behaviors determined in letters a–c; also if the activities, under which the property values were obtained, were carried out on the territory of a country than the Republic of Poland.

The definition of money laundering is contained in Article 299 § 1 of the Polish Penal Code of 6 June 1997 (Ustawa z dnia 6 czerwca…, 1997). This article *determines this phenomenon in the following way:* Anyone who receives, transfers or transports abroad, or assists in the transfer of title or possession of legal tender, securities or other foreign currency values, property rights or real or movable property obtained from the profits of offences committed by other people, or takes any other action that may prevent or significantly hinder the determination of their criminal origin or place of location, their detection or forfeiture, is liable to imprisonment for between six months and eight years.

On the basis of the Penal Code, solutions, related to combating money laundering phenomenon for, among other, breaking down organized crime groups involved in this type of practices, were introduced. According to Article 299 § 8 of the Penal Code, anyone who, by voluntarily reporting information to a prosecutor about people committing an offence or about the circumstances of an offence, prevented another offence from being carried out, is not liable to the penalty for the offence of money laundering.[1]

Within the framework of the Directive 2005/60/EC of the European Parliament and the Council of 26 October 2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing, the money laundering is defined as the following acts committed intentionally:

a) conversion of transfer of property, with the knowledge that it comes from criminal activity or from participation in such activities, to conceal of hide the illegal origin of this property or to assist the person, who participates in such activity, in order to enable such a person to avoid the legal consequences of such activity;
b) hiding or concealing the true character of the property, its source, location, disposal, movement, property or rights to property, knowing that such a property is derived from criminal activity of from participating in such activity;
c) acquisition, possession or use of property, knowing, at the time of receipt, that the property comes from a criminal activity or from participating in such activity;
d) participation or cooperation in committing, attempting to commit, as well as aiding, abetting, facilitating and advising in committing acts specified in the above-mentioned points

However, according to the definition of the US Treasury Department Training Center, money laundering is "a process by which the incomes supposedly obtained from criminal activity are transferred, transformed, exchanged or combined and mixed with legal funds in order to conceal or hide the true nature, source, orientation, flow or ownership or such incomes. The purpose of the money laundering process is to give the appearance of legality for funds obtained from non-legal activities or activities related to them".

In other words, this is a practice of "legalizing" illegally obtained money, for example, from prostitution, drug trafficking, arms trafficking, etc. The name itself originated from the fact the most common form of money laundering were service points, where it was difficult to control real incomes, so it was easy to overstate them. Laundries were often used to this practice, hence the name of this practice. This name well reflects its character and refers to its history (Sadło, 2011, p. 7).

The authors dealing with the money-laundering phenomenon assume that the above phenomenon may take place in three consecutive stages:

1. Placement (introduction to financial training).
2. Masking (separation of funds from an illegal source).
3. Integration (creating an explanation for the origin of resources), i.e. from the moment of introducing illegal funds to financial trading to their legalization (Ministerstwo Finansów, 2004, pp. 47–48)
4. Each of the above-mentioned forms realizes the following functions (Pływaczewski, 1993, p. 18):

[1] Persons involved in crime are accomplices, leadership perpetrators, perpetrators (recommendators), instigators and helpers, even if they did not bear criminal responsibility.

a) overcoming barriers related to the submission of foreign exchange declarations (statements) for the export and import of cash;
b) entry into the national (international) financial system;
c) camouflage by joining the legal financial system;
d) bringing purified money (linking them) to the destination country.

Activity of the General Inspector of Financial Information

The system of combating money laundering and financing of terrorism in created in Poland by:
– General Inspector of Financial Information,
– obligated institutions,
– cooperating units.

Within the framework of obligated institutions, there are: banks, cooperative savings and credit unions, brokerage houses, insurance companies, tax advisors, statutory auditors, accountants, notaries, legal advisers and lawyers, companies conducing leasing or factoring activity, entities operating in the field of currency exchange, investment funds and public operators within the meaning of the Postal law. Within the cooperating units, there can be distinguished organs of government administration and local government, as well as other state organizational units and the National Bank of Poland and the Polish Financial Supervision Authority and the Supreme Chamber of Control.

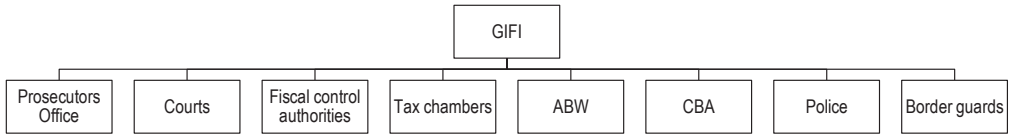


Figure 1. Types of cooperating units of the GIFI

Source: own study based on the Act of 16 November 2000 on counteracting money laundering and financing of terrorism.

In the realization of its statutory tasks, the GIFI is assisted by the Financial Information Department of the Ministry of Finance, which acts as the Polish Financial Intelligence Unit (PFIU).

The organs of government administration competent in matters of counteracting money laundering and financing of terrorism are (the Act on counteracting money laundering and financing of terrorism):

1. The minister competent for financial institutions as the main body of financial information.
2. The General Inspector of Financial Information. The General Inspector is appointed and dismissed by the Prime Minister at the request of the minister competent for financial institutions.

Pursuant to Article 4 of the Act on counteracting money laundering and financing of terrorism, the General Inspector's tasks include obtaining, collecting, processing and analyzing information in the mode specified in the Act and undertaking actions to counteract money laundering and financing of terrorism, in particular:

a) examination of the course of transaction, for which the General Inspector had reasonable suspicions;
b) realization of the transaction suspension or account blocking procedure;
c) settlement in the subject of releasing freezing property values;

d) providing and requesting information about transactions;
e) provision of documents justifying the suspicion of committing a crime to the authorized bodies;
f) initiating and undertaking other actions to counteract money laundering and financing of terrorism, including training of employees in obligated institutions in the scope of tasks imposed on these institutions;
g) control over compliance with the provisions on counteracting money laundering and financing of terrorism;
h) cooperation with foreign institutions and international organizations involved in counteracting money laundering or financing of terrorism;
i) imposing fines, referred to in the Act.

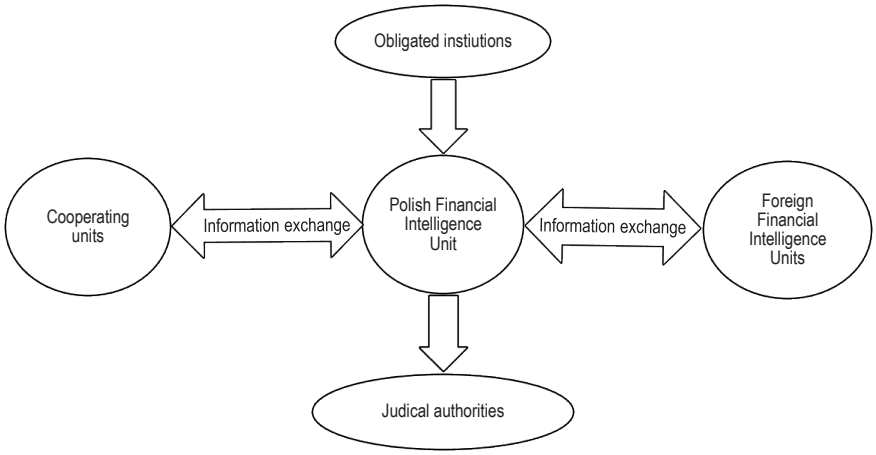


Figure 2. Diagram of obtaining and exchanging information within the activity of the Polish Financial Intelligence Unit

Source: own study based on the Act of 16 November 2000 on counteracting money laundering and financing of terrorism.

With the framework of transaction monitoring, the GIFI collects information on two categories of transactions: concerning above-threshold transactions and concerning suspicious transactions.

Above-threshold transactions are transactions that exceed 15 thousand euros (one thousand euros for some types of obligated institutions. This means that the Ministry of Finance collects information on each transfer, purchase of item, payment, withdrawal or other operation made for an amount greater than 15 thousand euros (the Act on counteracting money laundering and financing of terrorism).

In the case of suspicious transactions, information related to the offense is distinguished:

1. SARs (Suspicious Activity Reports), descriptive reports on activities and suspicious transactions, which contain a description of a few, several or several hundred transactions (often related to each other by the parties of transactions, circumstances of performance, similar time of completion or involvement of the same property values).
2. STRs (Suspicious Transaction Reports), which can take a twofold form: STR-ML (Suspicious Transaction Reports on Money Laundering) it may be related to money laundering; STR-TF (Suspicious Transaction Reports on Terrorist Financing) information that may be related to the financing of terrorism.

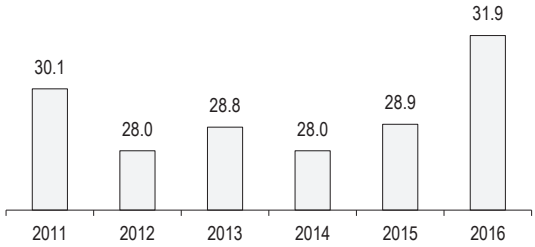


Figure 3. Number of information about above-threshold transactions received by the GIFI in the years 2011–2016 (in millions)

Source: own study based on Ministerstwo Finansów (2017), p. 10.

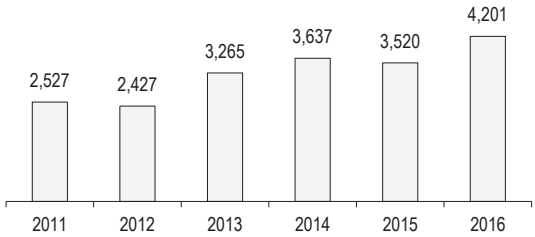


Figure 4. Number of SARs reported to the GIFI in the years 2011–2016

Source: own study based on Ministerstwo Finansów (2017), p. 9.

SARs – in comparison to notifications on individual suspicious transactions – contain more information, especially regarding the suspected offenses committed by the obligated institutions and the circumstances accompanying the transactions. Such a wide information spectrum enables faster verification of data received in other sources of information and shortens the time for the realization of activities undertaken by the GIFI in cooperation with the prosecutor's office and law enforcement authorities.

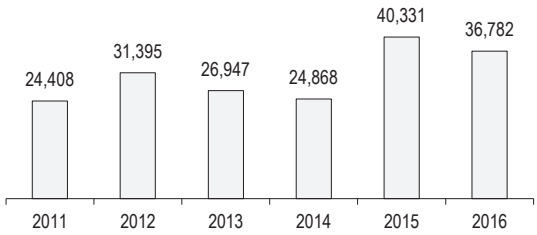


Figure 5. Number of STRs reported to the GIFI in the years 2011–2016

Source: own study based on Ministerstwo Finansów (2017), p. 9.

The values presented by the GIFI indicate a large disproportion between the amount and significant of information obtained by state authorities on the private affairs of citizens and the low rate of benefits obtained in this way by the state. Large reservations may be roused by automatic collection of information about each above-threshold transaction. It would be possible to focus in a greater extent on suspicious transactions. In this way, the GIFI obtains a very large amount of data, which probably is not able to analyze effectively. Additionally, there is a huge database of confidential citizens' affairs, which may be used by unauthorized persons to interfere with privacy.

The above consideration are confirmed by the results of the Supreme Chamber of Control (Polish: NIK; Najwyższa Izba Kontroli, 2016) regarding the system of counteracting money laundering and financing of terrorism. The NIK indicates that in 2014 the GIFI carried out 2.4 thousand proceedings, while only 170 notifications about suspicion of committing money laundering were directed to the prosecutor's office. Moreover, the NIK notes that in the audited period (from beginning of 2013 to mid-2015), the effectiveness of the system of supervision over institutions obliged to register above-threshold transactions and suspicious people was at a low level. This can be confirmed by the fact that at the level of money laundering estimated at 18.2 billion PLN (in 2014), in criminal proceedings, the property was secured for only 1.2 billion PLN and the forfeiture of assets in the amount of 11.5 million PLN was declared. This presents only 0.07% of the estimated amount. On the other hand, in 2015, the scale of money laundering phenomenon was estimated at 17 billion PLN. This time, property to the amount of 3 million PLN was secured in criminal proceedings and property forfeiture of about 100 million PLN was declared. This is 0.6% of the estimated amount.

Another aspect indicated by the Supreme Chamber of Control is the fact that the Minister of Finance did not regulate the issue of supervision over the functioning of on-line exchange offices. It should be noted that such exchange offices are not subject to any scope of anti-money laundering controls. However, none of the legal acts refers to on-line exchange offices, because they appeared only in 2009. It should be emphasized that on-line currency exchange market is growing year by year. As estimated by Currency One S.A., in 2015, currency exchange was conducted in Poland through to approx. 25 billion PLN. On the other hand, in 2016, the turnover on the market is to exceed 30 billion PLN (*Raport…*, 2015, p. 22).

Conclusions

Counteracting money laundering and financing of terrorism is one of the important tasks of the state aimed at limiting crime and ensuring security. Detection and prosecution of crime connected with money laundering and financing of terrorism is a difficult task, requiring the cooperation of many state bodies and services, as well as international cooperation. The practice of concealing the actual origin of cash from criminal activities is primarily related to the functioning of organized crime. It is estimated that the value of laundered money can reach up to 5% of global GDP annually. The development of the underground economy may reach 2–11% of Germany's GDP, 10–13% of Japan's GDP and 4–33% of USA's GDP (Smolak, 2013).

Both the appointment of a professional financial intelligence unit – the General Inspector of Financial Information, as well as amendments to Article 299 of the Penal Code (that enabled the implementation of European standards to the Polish system of combating the above-mentioned practice) were extremely important in this respect. The amendment to the Polish Act on counteracting money laundering and financing of terrorism of 2009, in which new financial instruments to combat money laundering include financial penalties imposed on institutions

failing to meet their obligations, should be assessed positively. This is a positive signal for the increase in the involvement of state authorities in the fight against the legalization of "dirty" income.

It is appropriate that many financial institutions and other entities that make it possible to detect a crime were included to the counteraction system. Obligated institutions and cooperating units, as a part of the procedures, are obliged to inform the GIFI about cases of excessively spent money. All these stages fall under the procedural actions of these units and they are realized with the participation of the General Inspector and cooperating units.

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DIVERSIFICATION OF THE GLOBAL GREEN BOND MARKET

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ABSTRACT Green Bonds emerged as a new form of environmental financing in 2007. While the green bond market is viewed as a niche in the global financial market, it has grown rapidly to nearly USD 900 billion in 2017. The aim of the article is to analyze and assess changes taking place in the structure of the global green bond market with particular emphasis on the diversification of issuers undertaking activity in this market area. The first part of the paper summarizes the general theory of green bonds. It also includes an exemplification of different types of green bonds and shows conditions which should be satisfied to call a bond the green bond. Afterward, the growth and diversification of the green bond market are shown and analyzed, what makes a field to draw some conclusions.

Introduction

In 2017, the green bond segment has been present in the structure of the global debt securities market for 10 years. Despite the relatively short history of existence, the market for these instruments is characterized by high dynamics of its value growth and evolutionary changes occurring in its area of operation. In 2017 alone, the value of the analyzed market increased by 30% compared to the previous year, reaching EUR 895 billion (compared to

EUR 694 billion in 2016) (Boulle, 2017; Boulle, Frandon-Martinez, Pitt-Watson, 2016). In parallel to the above, the direction of capital allocation to various areas of pro-ecological activity is diversified, and what is more important – the categories of issuers undertaking activity on the green bond market have clearly differentiated. The aim of the article is to analyze and assess the changes taking place in the structure of the global green bond market with particular emphasis on the subjective diversification of issuers undertaking activity in this market area.[1]

Literature review

The literature on the subject has no clear definition of the concept of green bonds. The analysis of literature sources leads to the assertion that green bonds constitute a typical debt security meeting the standards of bonds, with the objective accompanying the issue of these instruments being their distinguishing feature (Gatti, Florio, 2018, p. 208). On this ground, a discourse is born about a goal that would enable the bonds to be issued to get the status of green bonds. The problem of terminological nature is additionally complicated by the definition of climate bonds in both the subject literature and economic practice. The boundary between the indicated types of bonds – green and climate – is not strict and easy to grasp. It turns out that the category of green bonds is treated both as a synonym of climate bonds (Lütken, 2015, p. 77; OECD, 2015, pp. 42–43; Cooperman, 2017, pp. 149–150; Wang, Stern, Limaye, Mostern, Zhang, 2013, p. 165), and as a separate class of debt securities.

The authors calling for differentness of the analyzed bond categories indicate that green bonds are a class of financial instruments used to finance projects aimed at environmental protection. Climate bonds, on the other hand, provide capital support for projects aimed at reducing greenhouse gas emissions and adapting the economy to climate change (Mackenzie, Ascui, 2009, p. 15; Kerste, Rosenboom, Sikken, Weda, 2011, p. 196; Nordic Council of Ministers, 2011, p. 47). In the light of the above, it can be assumed that the green bond category is meaningfully broader than the concept of climate bonds because the capital accumulated as part of issuing these instruments (green bonds) may be allocated to pro-environmental projects that have no impact on climate change (Kidney, Boulle, 2015, p. 582). As a consequence of this perception of mutual relations, it can be assumed that climate bonds are a specific type of debt issued within a broader group of financial instruments – green bonds.

However, the identity between green bonds and climate bonds is noticed by institutions that are active in the area of the green bond market – the World Bank (one of the main issuers of the securities of this category) and the Climate Bonds Initiative (an institution recommending green bond issue standards). In periodic reports and information brochures published by these institutions, green bonds are treated as instruments ensuring the collection of funds for financing projects aimed at environmental protection and combating climate change (World Bank, 2015, p. 23; www.climatebonds.net). In this approach – considered from the point of view of the issue's objective – the green bond category is a synonym for the concept of climate bonds (Cooperman, 2017, pp. 149–150; Hoffmann, 2015, p. 4).

[1] The first ever green bond issue was carried out in 2007 by the European Investment Bank. The issued bonds were termed Climate Awaness Bonds, and their aim was to raise capital constituting the basis for loan financing investment projects in the field of renewable energy sources (wind, water, solar, geothermal) and improvement of energy efficiency (local heating, cogeneration, insulation of buildings, restrictions of energy losses in its distribution networks). The activity of the European Investment Bank not only enabled the collection of funds in the amount of EUR 600 million (Modak, 2018, p. 162), but also initiated a new segment of debt securities – green bonds.

Difficulties in defining the boundary between investment projects designed to protect the environment and at the same time having no effect on climate change mean that for the purposes of this study, the concept of identity of green bonds and climate bonds has been accepted as valid. The adoption of such a position also results from the fact that the data being the subject of further analysis come from the Climate Bonds Initiative reports, and thus present aggregate figures, covering both the green bond and climate bond market, treating both instruments as equivalent.

According to the existing arrangements, the distinguishing feature of green bonds lies in the purpose for which the debt was issued. According to the methodology adopted by the Climate Bonds Initiative (Green Bonds Methodology, 2016), granting the debt securities the status of green bonds is based on a defined catalog of capital allocation directions, including financing of investment projects in the field of:

1. Renewable and alternative energy – investments in projects in the field of solar, wind, water, bio and geothermal energy, including expenditures for the construction of infrastructure, production, distribution and storage of energy from the above-mentioned sources.
2. Energy efficiency – construction and modernization of green residential and commercial facilities (buildings), development and implementation of energy-efficient products, processes and technologies, recovery of waste heat, reduction of greenhouse gas emissions.
3. Low-emission transport – expenditures for: construction of national and urban railway and goods systems, production of electric vehicles and vehicles powered by alternative fuels, rapid bus transit, bicycle transport, and aviation biofuels.
4. Sustainable water management – investments in: rainwater adaptation systems, treatment and recycling of water resources, immunization of the economy on variability of precipitation.
5. Waste management, recycling and pollution control – activities in the field of closed circulation economy aimed at reducing energy consumption and greenhouse gas emissions.
6. Sustainable agriculture and forestry, which concern problems of coal management, afforestation (above all but not only) of degraded areas, promotion and implementation of solutions in agriculture, which: favor reduction of carbon dioxide emissions and greenhouse gases, improve the economy's resilience to climate change, are focused on limiting the use of artificial fertilizers in agricultural production.
7. Infrastructure resistant to climate change, mainly in the area of weather anomalies.

The compliance of the bond issue declared by the issuer with the above-mentioned catalog is the basic premise for the classification of instruments and their inclusion in the group of green bonds. It should be mentioned that in the practice of the green bond market, two types of instruments of this type have developed – labelled green bonds and unlabelled green bonds. The first ones- labelled green bonds – represent a narrow group of debt instruments, in which the issuer not only maintained consistency of the issue's objective with the definitional assumptions of green bonds, but also assumed information obligations, in which it (on a current basis) publishes the direction and the scale of allocation of acquired capital. This is an important condition, as according to the Climate Bonds Initiative, the term green bonds can only be used for those instruments where 95% of the acquired capital is financed by the pro-environmental objective of the issue (described in points 1–7).[2] The category of unlabelled

[2] The category of labelled green bonds excludes instruments in which more than 5% of the value of inflows obtained from their issue is intended for general corporate purposes.

green bonds, on the other hand, is a broader concept and covers instruments in which the acquired capital (in whole or in part) finances projects that benefit environmental protection and / or serves to build an economy resistant to climate change. Therefore, in the case of unlabelled green bonds, there are no restrictive classification conditions. It is only important that the capital accumulated on the bond market supports pro-ecological activity (not necessarily that specified in points 1–7).[3]

Method

Analysis and evaluation of the process of diversifying the green bond market is based on secondary data – statistics published by the Climate Bonds Initiative. It is a leading international institution whose aim is to promote projects that transform traditional economic systems into low-emission and climate-resilient economies. The strategy of the Climate Bonds Initiative includes a number of activities focused on: 1) determination of green bond issue standards and certification of issued instruments; 2) developing and popularizing solutions for the adaptation of green bonds to strategies for financing the activities of governments, financial institutions and enterprises in the real area; 3) ensuring transparency of the green bond market and stimulating its development through publication activity focused on reporting on qualitative and quantitative changes taking place within the green bond market (www.climatebonds.net).

As part of this study, the analysis covered the years 2012–2017 and accounted for internal and subjective diversification of the green bond market.

Results

The green bond market is characterized by impressive dynamics of its value increase (Figure 1). In the years 2012–2017, the cumulative annual growth rate (CAGR) of indebtedness related to the issue of these instruments amounted to almost 40%. Comparing the value of the analyzed market recorded in 2017 (USD 895 billion) to 2012 (USD 174 billion), it turns out that there was a fivefold increase in the value of the green bond market in the period under consideration.

Different development trends in the individual segments can be observed while assessing the internal structure of the green bond market. It turns out that the category of labelled green bonds shows a clearly higher growth rate of its value, gaining at the same time an increasingly larger share in the structure of the green bond market (Table 1). In 2012 labelled green bonds represented only 1% of the total value of the green bond market (USD 2 billion from USD 174 billion), and in 2017 this share was already 25% (USD 221 billion from USD 895 billion). The sharp increase in the importance of these instruments results directly from the above-average growth rate of the value of labelled green bonds- the accumulated annual growth rate (CAGR) of this green bond segment, estimated for 2012–2017, is over 156%.

[3] Methodology adopted by the Climate Bonds Initiative employs two basic boundary conditions for the classification of bonds as *unlabelled green bonds*: (1) there are market data on which the bond issue can be linked to the environmental problem (2) and the acquired capital finances this activity in 95%.

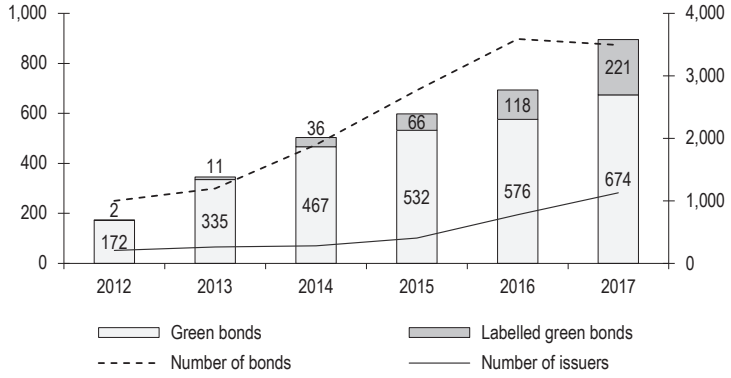


Figure 1. Value of the green bond market in USD billion (left axis), including the number of issuers and the number of issues (right axis)

Source: Padraig, Boulle, Kidney, Silver (2012); Padraig, Boulle, Kidney, Robins, Knight (2013); Boulle, Kidney, Oliver (2014); Olsen-Rong, House, Sonerud, Kidney (2015); Boulle (2017); Boulle, Frandon-Martinez, Pitt-Watson (2016).

Table 1. Indicators of the dynamics and structure of the green bond market (broken down into the segment of *labelled green bonds* and *unlabelled green bonds*) (%)

	2012	2013	2014	2015	2016	2017
Green bond market						
Market value growth dynamics (y/y)		98.85	45.38	18.89	16.05	28.96
CAGR						38.76
Labelled green bonds						
Share of *labelled green bonds* in the green bond market	1.15	3.18	7.16	11.04	17.00	24.69
Market value growth dynamics (y/y)		450.00	227.27	83.33	78.79	87.29
CAGR						156.26
Unlabelled green bonds						
Share of *unlabelled green bonds* in the green bond market	98.85	96.82	92.84	88.96	83.00	75.31
Market value growth dynamics (y/y)		94.77	39.40	13.92	8.27	17.01
CAGR						31.41

Source: own study based on Climate Bonds Initiative data.

As a consequence of the above, the share of the unlabelled green bonds segment in the green bond market has been gradually decreasing – from over 98% recorded in 2012 to 75% in 2017. At the same time, the dynamics of the growth of the value of the examined market is observed, which in average annual terms (measured with the CAGR index) amounted to just over 31%. Parallel to the changes taking place in the internal structure of the green bond market, there are significant changes in the subjective structure of operating issuers (Figure 2).

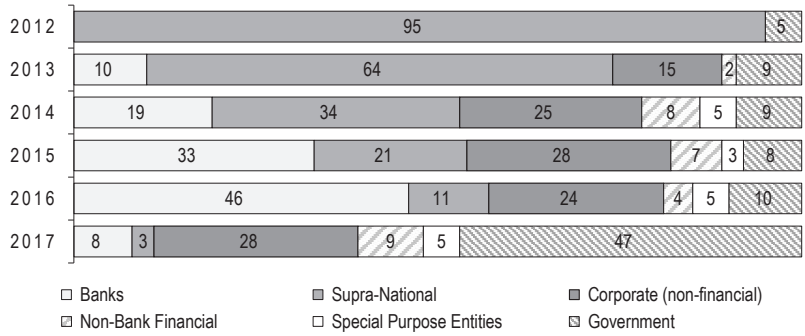


Figure 2. Structure of issuers on the green bond market (%)

Source: Padraig, Boulle, Kidney, Silver (2012); Padraig, Boulle, Kidney, Robins, Knight (2013); Boulle, Kidney, Oliver (2014); Olsen-Rong, House, Sonerud, Kidney (2015); Boulle (2017); Boulle, Frandon-Martinez, Pitt-Watson (2016).

According to the existing findings, the green bond market was initiated through issues made by transnational financial institutions.[4] This brought permanent consequences to the subjective structure of issuers present on this market, because until 2013 the green bond market was created by issues by transnational financial institutions with a small (5%) share of issuers representing local government. The process of diversifying the group of issuers undertaking activity in the field of green bond issues has been observed since 2013 and it should be emphasized that the diversification of the subjective structure of the market is quite clear. It turns out that during the analyzed period, the importance of supranational financial institutions in shaping the value of the green bond market has decreased dramatically (from 95% in 2012 to 3% in 2017). At the same time, based on the presented statistics, three main categories of issuers can be distinguished, which can be attributed to a significant share in shaping the value of the green bond market – banks, enterprises (non-financial) and government authorities, which in total account for 83% of the value of the analyzed market.

Conclusions

The issue of green bonds is certainly an instrument for diversifying the sources of financing the borrowing needs of a diverse group of entities, at the same time fostering diversification of the investor base. A particular asset of the activity undertaken in the green bond market is the linking of financial aspects with the concept of sustainable development (highly appreciated and of huge interest for potential investors). Linking both elements not only creates a positive image of the issuer among the market participants, leading to the recognition of benefits from reputation and strengthening of the market position, but it also intensifies the transformation of economic systems into a low-emission and climate resilient model (by providing sources of financing for environmental projects).

The statistics analyzed in the present study reveal the need for a separate segment dedicated to financing pro-ecological activities. This statement is justified not only in the indicators characterizing the increase in the value

[4] In 2007, historically, the first issue of bonds was carried out by the European Investment Bank. In the following year, the World Bank joined the group of green bond issuers by issuing a debt issue to finance the needs of Scandinavian investment funds in the scope of financing climate projects, and in 2010 subsequent issues of green bonds were carried out by the European Bank for Reconstruction and Development and the International Finance Corporation.

of the green bond market, but also in the diversification of the group of entities undertaking emission activity. A clear and progressive diversification of the entity structure of the green bond market indicates that there is a growing need to finance projects that protect the natural environment. What's more, it also signals a growing awareness of economic operators in the need to balance the demand of modern societies with the exploitation of natural resources and its negative impact on the environment and climate change.

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LOGISTICS AS A TOOL TO IMPROVE THE COMPETITIVENESS OF DHL SERVICES

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ABSTRACT

The article presents the role, tasks and functions of logistics in improving competitiveness of courier companies. The author has presented and justified the need to support the process of managing modern companies with the use of logistics tools. Next, the entry of DHL to Europe and Poland as well as the development of the company's market strategy have been presented. The latter part of the article describes the quality research regarding the most important courier companies on the Polish market. Moreover, the size of the investments necessary in 2018–2025 to strengthen this courier company's competiveness were estimated on the basis of the current financial results.

Introduction

The courier service industry plays a prominent role in logistics. Its basic objective is delivery of a parcel to the end customer at the right place and time. The service should be carried out promptly, professionally, and satisfy the needs of the most demanding customer. In the currently competitive courier service market, DHL aspires to provide and develops such services.

The essence of modern logistics

According to P. Blaik, logistics is the process of exchanging data, information, and goods between contractors, as well as adequate control leading to effective planning of integrated logistics systems in this process (Blaik, 2001, pp. 20–22). The creation of new goals in logistics is intended to help solve new practical issues concerning strategy of given companies and individual customers. Thanks to the introduction of basic logistics tools to every business strategy, it becomes possible to obtain a new, better quality that guarantees acquisition of new customers, and thus the chance to become the leading operator in the logistics market.

Today, there can be observed widespread internationalization of logistics tasks and functions in the sphere of modern economy. This applies to both the structure, as well as wider logistics activities. In order to improve company efficiency, it is advisable to cooperate in larger economic systems, e.g. the European Union, where cooperation with partners in the supply chain called "Eurologistics" is characterized by:

- framework conditions for the functioning of the economy of particular countries due to the creation of a European "Common Market",
- introduction of agreed operating structures including appropriate legal, organizational and technical regulations on this market(Szpon, Dembińska-Cyran, Wiktorowska-Jasik, 2005, pp. 13–14).

M. Ciesielski attributes similar importance to logistics, which he defines as commercial performance of forwarding, transport and storage services as well as related services, and processes supporting the flow of goods between the links in the supply chain (Ciesielski, 2005, pp. 13–14). W. Rydzkowski (2011) complemented logistics functions with terminal repacking services, foiling, minor repairs and creation of promotional sets. Similar definitions were included by K. Rutkowski and I. Dembińska in their textbooks on logistics (Rosa, Jedliński, Chrąchol-Barczyk, 2017, pp. 17–24). Another author, J. Szpon defines the concept of logistics in accordance with the 7R's principle (Szpon, Dembińska-Cyran, Wiktorowska-Jasik, 2005, pp. 13–14)*:*

- the right product,
- the right quantity,
- the right condition,
- the right place,
- the right time,
- the right customer,
- the right price.

On the basis of this rule, enterprises strive to fully meet the needs and requirements of customers, which is the main goal of every company. The introduction of new strategies, solutions, technologies and innovations is becoming an indispensable cycle of life and development of every company

The need to support modern company management with logistics instruments

Logistics management of modern enterprises is based on the process of making the right previously agreed decisions by people who have been designated to do so in order to effectively optimize the entire supply chain process. Striving to achieve the desired goal by optimizing company costs without compromising on manufactured product quality, ensures effective service throughout the rational business management process. In order to properly manage the whole process, companies use appropriate logistics instruments which include, among others:

- planning the entire process, from beginning to end,
- efficient distribution of information,
- continuous process monitoring,
- optimal planning of unit process,
- coordinating the work of given entities,
- effective and efficient customer service (Więcerzycki, 2009, pp. 260–285).

The competition taking place in currier service, transport, shipping and logistics market (TSL) is particularly important for any company that provides services in this industry. Thanks to fierce competition, every company (including DHL) wants to constantly improve and apply the latest solutions (new strategies), implement new methods and instruments to meet customers' requirements, which is the main goal of every company, as well as perform services at the highest level, which, in turn, leads to the company becoming a leader on the TSL market. Implementation of innovative logistics and marketing tools, optimization of information technology, more efficient data transfer, providing staff with training in order to acquire new skills, as well as many other elements that have contributed to more effective management of company structures in order to win new customers who make use of services offered by other competitive companies, and those who are new on the market, will result in the systematic development of the TSL economic structure (Januła, Truś, Gutowska, 2011, pp. 250–260).

In order to optimize the entire supply chain and individual logistics processes, modern transport, forwarding and logistics companies often use instruments that help them manage logistics.

Management of logistics with the use of selected instruments help achieve:

a) improvement in the flow of goods to the customer, including:
   - creating progressive strategy for a company that contributes to rapid development – optimization of the logistics chain,
   - development of a marketing and logistics concept in accordance with the customer's requirements,
   - improved information flow,
   - fast data transfer;

b) modernization of IT programmes, including:
   - implementation of modern IT programs supporting the logistics system,
   - automatic recognition of goods using bar codes and RFID readers,
   - EDI – electronic data interchange,
   - improved warehouse operation using warehouse automation;

c) introduction of innovative management methods, including:
   - Just in Time,
   - MRP – material requirements planning,
   - MRP II – manufacturing resource planning,
   - ERP – enterprise resource planning (support with the use of modern technology),
   - DRP – distribution resource planning,
   - application of the kanban concept – that is, controlling production and general overview of the stocks in the warehouse,

- application of the kaizen concept – continuous improvement of the enterprise in the entire logistics chain, involving all employees,
- Introduction of ABC and XYZ technique (Mroczko, 2016, pp. 69–73).

Introduction of the above-mentioned tools into the management system of a modern company will result in increased customer satisfaction, competitive advantage, minimisation of time and costs of material and finished goods flow, decrease in potential stock, better use of production potential, reduction of manufacturing costs (more favourable price for the final consumer).

DHL's development strategies

DHL company was founded in San Francisco in 1969. Its named derived from the first initial of each founder's last name: Adrian Dalsey, Larry Hillblom and Robert Lynn (DHL, 2018). In the years 1970–1980, there could be observed a strong demand for transport of goods by sea from San Francisco to Honolulu. At that time, the biggest difficulty faced by customers was customs clearance, which significantly delayed delivery, and the waiting time generating considerable costs. The founders of DHL, especially one of them, came up with the idea of transporting the necessary documents for customs when shipping by air, which significantly reduced the budget costs, and most importantly, minimized the vessels' turnaround times (DHL, 2018).

Such a solution allowed them to develop their offer. They were the first to enter the new market and became one of the most competitive companies in this industry, which contributed to the significant development of DHL. A few years later, i.e. 1979–2000, DHL opened its offices in Africa and Europe, including Poland. After 10 years of operation, the company has 360 logistic centres and cooperates with over 85,000 customers worldwide. Thanks to having its logistics centres in almost all countries in the world, the company brings a new dimension to customer service and creates new service for them that allow distributions of parcels and global transport, i.e., WorldMail (DHL, 2018).

"WorldMail" is also an international electronic mail service that allows arranging delivery online from a given country at the time convenient for the customer. Moreover, it allows tracking a parcel and determining the lead and delivery time to the customer. In 1984, the company entered the Polish market under the name "DHL Worldwide Express". In order to take control over a bigger sector of the domestic and international shipping industry, the company decided to cooperate with Cargo, a forwarding company. This cooperation strengthened its position on the market and increased competitiveness between it and Poczta Polska (DHL, 2018).

DHL entering the European and Polish courier service market

In order to keep up with the technological progress around the world that took place at the end of the 20th century, DHL began to invest in its logistics centres. The first goal in the four-year investment programme was to automate every centre, whereas in the next years, the company decided to invest in:

- warehouse equipment,
- the latest computer software,
- fast information flow,
- direct information transfer,
- infrastructure and rolling stock,
- mobile applications for phones and other devices.

Although the four-year investment programme for 2012–2016 cost almost USD 100 million, it brought substantial benefits for the company, among others, ISO certificates, the award for the implementation of ecological strategies, and purchase of Boeing 757 freighter, thanks to which deliveries took only a day, which in turn contributed to a larger number of customers (DHL, 2018).

At the beginning of the 21st century, DHL joined forces with NWA Cargo to completely take over the entire Asian market and save their customers from having to spend millions of dollars on secure, effective and fast services integrating Asia and the US.

IN 2002, Deutsche Post bought 51% of DHL's shares, and thus became the principal shareholder of DHL (DHL, 2018).

The constantly developing DHL has become a leader on the international courier service market, and above all in the aviation industry, possessing the latest technology and maintaining high quality of customer service. Constant investments in the company made it possible to improve the entire logistics process and met all customers' requirements, while increasing its competitiveness.

In 1984, DHL Worldwide Express, the biggest delivery company in the world, took advantage of the untapped reserves in the courier service industry and started providing its services on the Polish market. The cooperation between DHL and Cargo, a Polish shipping company, made it possible to take over a significant part of express international courier services and control this part of the courier service sector in Poland (Pliszka, 2008, pp. 113–114).

Since 1989, i.e. the beginning of socio-economic reforms, the courier service market in Poland has been creating an adequate industry structure related to delivery. Free market standards initiated by the Polish government allowed the creation of new domestic courier companies such as:

- Masterlink Express,
- Kurierserwis,
- Stolica,
- Opek.

Removing barriers on the Polish courier service market widened competition exerted by foreign companies, as it attracted the biggest courier companies in the world. Favourable conditions on the Polish market allowed foreign companies to create and develop logistics centres, organizational units or departments, as shown in Table 1 (Pliszka, 2008, pp. 110–116).

Table 1. Representatives of the largest foreign courier companies in Poland

Company name	Country with the company's registered office	The year of the establishment of a branch in Poland	Service		
			local	domestic	foreign
DHL Worldwide Express	USA	1984		×	×
RGW Express	Germany	1990			×
TNT Express Worldwide	The Netherlands	1992		×	×
Airborne Express	USA	1996			×
FedEx	USA	1997			×
OCS	Japan	2002			×
United Parcel Service	USA	2005	×	×	×
Direct Parcel Distribution	Germany	2007	×	×	×

Source: Pliszka (2008), pp. 113–114.

There are 3 branches operating under the DHL brand name:

– DHL Global Forwarding Sp. z.o.o,
– DHL Express Polska Sp. z.o.o,
– DHL Exel Supply Chain Sp. z.o.o (DHL, 2018).

DHL Global Forwarding was established as a result of a merger of Danzas and Cargoline, which started new and continued previous activities of Deutsche Post World Net under the name DHL Logistics.

The merger of Worldwide and Deutsche Post initiated the creation of DHL Express (Ciesielski, 2005, pp. 148–159).

At the end of 2005, DHL extended its offer with additional economical services of Exel, and thus became the undisputed leader on the Polish courier service market.

DHL Supply Chain specializes mainly in:

– analysing customers' requirements in order to meet them,
– the structure of good storage,
– helping organize the entire supply chain,
– setting goals in the sphere of the company's production activity (DHL, 2018).

In Poland, DHL Express has: registered office in Warszawa; 6 innovative sorting plants (3 express and 3 general cargo) among others in: Warszawa, Zabrze, Głuchowo near Poznań; over 40 terminals (including in Przecław near Szczecin); 68 offices; 84 distribution centres; 6 air cargo sorting plants; over 5,000 employees; about 50 customer service centres; 180 DHL Service Points; 3 airplanes; 6 customs agencies; and over 600 connections between terminals (DHL, 2018).

DHL investments as a chance to improve the company's competitiveness

The most important investment will be the creation of an ultramodern airport terminal in Okęcie for the international shipping market. This investment will cost almost PLN 100 million, and its aim is to summarize the 25 years of operation, as well as increase popularity among its local clients. The terminal in Okęcie will serve numerous functions:

– airport for airplanes with shipments,
– sorting plant for air freight,
– customs,
– standard courier terminal (Duszczyk, 2017).

All these innovations and investments are implemented in order to meet the customers' requirements, and provide them with highest levels of satisfaction when making a delivery with DHL. The most important benefits for the customer include:

– reducing customer service time,
– high quality with relatively low service prices,
– complete handling of shipments,
– all-time tracking of shipments,
– complete control over the transport process (DHL, 2018).

Research on courier service quality conducted by Polski Instytut Badań Jakości in 2017 included such companies as: DHL, DPD, FedEx, GLS, Inpost, Pocztex, UPS (PIBJA, 2017). Synthetic evaluation revealed high position of DHL in this ranking, which is confirmed by the results presented in Table 2.

The assessment and final evaluation of the final research carried out by Instytut Jakości helped to choose the "best" courier company – i.e. DHL, which, according to the conducted research, may offer the best service conditions, as well as meet and satisfy the expectations of demanding customers.

Table 2. The final assessment of the courier companies research conducted in 2017

No.	Company	Result (%)	Information
1	DHL	88.5	4.4/Very good
2	Inpost	86.3	4.3/Very good
3	UPS	85.5	4.2/ Good
4	Pocztex	82.6	4.0/Good
5	DPD	81.9	4.0/Good
6	GLS	72.9	3.4/Good
7	FedEx	65.9	2.9/Satisfactory

Source: PIBJA (2017).

DHL strives to become a modern company that cares not only about their customers, but also the environment in which it operates (DHL, 2018). However, in order to achieve this, it needs significant investment funds, which are shown in Table 3.

Table 3. The estimate of the financial resources needed for further development of DHL until 2025

Detailed list	Years				
	2017 (performance)	2018	2019	2020	2025
Income	EUR 14.9 bn	EUR 16.1 bn	EUR 17.5 bn	EUR 19.1 bn	EUR 21.01 bn
Costs	EUR 14 bn	EUR 15.1 bn	EUR 16.4 bn	EUR 17.9 bn	EUR 19.7 bn
Financial result	EUR 885 m	EUR 1 bn	EUR 1.1 bn	EUR 1.2 bn	EUR 1.3 bn
Net profit	EUR 633 m	EUR 775 m	EUR 904 m	EUR 1 bn	EUR 1.2 bn
Own investments 80–90%	EUR 334 m (80%)	EUR 350 m (82.8%)	EUR 376 m (84.5%)	EUR 390 m (87.8%)	EUR 450 m (88.9%)
Loans 10–20%	EUR 67 m (20%)	EUR 60 m (17.2%)	EUR 58 m (15.5%)	EUR 47.5 m (12.2%)	EUR 50 m (11.1%)

Source: own estimate based on the results achieved by DHL.

Assuming that DHL's strategy foresees 8% change in income and costs between 2017 and 2018, the financial result is projected to be about EUR 1 billion a year, which will generate profits at the level of EUR 775 million. By investing in the further development programme, the company will want to allocate a total of EUR 410 million for further expansion in 2018.

Conclusions

The deliberation presented in this article can lead to the following conclusions:

1. Logistics service can be defined as commercial performance of forwarding, transport and storage services as well as related services, and processes supporting the flow of goods between the links in the supply chain.
2. Modern logistics management helps improve circulation of goods, information services regarding logistics processes, and competitiveness of logistics companies.
3. DHL entering the Polish courier service market in 1984 significantly increased competitiveness on this market.
4. The synthetic evaluation of courier service quality from 2017 revealed a very good assessment of the services provided by DHL, as compared to services provided by Inpost, UPS, Pocztex and DPD.
5. Improving the offer and strengthening the competitive position of DHL requires spending approx. EUR 410 million in 2018, and approx. EUR 500 million in 2020.

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REPAYABLE FINANCIAL INSTRUMENTS IN THE EUROPEAN UNION – THE RANGE OF EFFECT AND EFFICACY

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ABSTRACT

One of the goals of the Cohesion Policy is ensuring the conditions for economic growth, well-being and social integration in the European Union. As a result of the policy, the differences in the economic development should be decreased. Repayable assistance is becoming the more and more popular form of supporting those goals, and its fundamental feature is the need to repay the received sum. Repayable financial instruments as part of the EU programmes exemplify how commercial solutions applied on financial markets may be implemented at the level of public intervention and management of funds available under operational programmes. Capital management in a market manner in relation to public intervention measures was already observed in the early 1990s. Initially, these were isolated measures taking the form of loan funds, guarantee funds or venture capital. Financial instruments may be applied in relation to three areas: enterprises, particularly micro, small and medium, public-private partnerships and other projects aimed at urban development (urban area development funds) and in the area renewable energies and energy efficiency. As at the end of March 2017, in the member states there were 1,058 Financial Instruments which took the form of, *inter alia*, loans, guarantees, and venture capital, out of which 89% financed growth and operations of enterprises, 7% – urban development, and 4% – energy efficiency and renewable energies.

Introduction

One of the goals of the Cohesion Policy is ensuring the conditions for economic growth, well-being and social integration in the European Union. As a result of the policy, the differences in the economic development should be decreased. Repayable assistance is becoming the more and more popular form of supporting those goals, and its fundamental feature is the need to repay the received sum. Despite the need to pay the funds back, this form

of assistance is viewed favourably by all beneficiaries, and due to the revolving mechanism it generates more benefits, as the funds that were once disbursed to beneficiaries come back from them, thus multiplying the value of the support and the number of beneficiaries. This type of financing with the European Union funds in the 2007–2013 programming period was exemplified by Financial Engineering Instruments (FEI) which constituted a way to apply the structural funds to implement the Cohesion Policy, thus contributing to the long-term and sustainable economic growth in the individual regions and the whole European Union. In the 2014–2020 programming period, the repayable assistance to finance development was referred to as Financial Instruments (FI).

The aim of this paper is to demonstrate the idea, scope and levels of repayable assistance and to analyse its efficacy. The area under research includes the EU member states which implemented the FEI in the 2007–2017 programming period.

Theoretical aspects of financial instruments

Repayable financial instruments as part of the EU programmes exemplify how commercial solutions applied on financial markets may be implemented at the level of public intervention and management of funds available under operational programmes. Capital management in a market manner in relation to public intervention measures was already observed in the early 1990s. Initially, these were isolated measures taking the form of loan funds, guarantee funds or venture capital.[1] Later on the process accelerated, taking the form of various financial instruments. The idea behind the financial instruments is supporting the Cohesion Policy, at the same time complying with the rule of risk sharing and assistance in achieving the goals stipulated in the operational programmes of the member states.

Reorientation of the European Commission from the subsidy instruments towards repayable instruments to ensure effective use and management of structural funds was connected with the possibility of obtaining significantly better results in terms of both economic and social issues. The major reasons for implementing Financial Instruments, set out in the Regulation (EU) No. 1303/2013 of the European Parliament and of the Council of 17 December 2013 include: (*Financial Instruments*…, 2013; p. 52; Mackiewicz, Przybyłowski, Rybkowski, Tamowicz, 2014, p. 28):

a) supporting the implementation of regional policies to assist development of the SME sector, in particular enterprises at their early stage of development (start-up capital), supporting urban development or urban regeneration, support for mitigating and reducing climate changes by increasing energy efficiency;
b) reducing the financing gaps by providing entrepreneurs with better access to financing, also via offering more attractive interest rates, or greater availability of venture capital;
c) more effective use of public funds compared to grants (subsidies), due to the revolving mechanism and engagement of public funds, whereby the volume as well as scope of support is multiplicate;
d) possibility of engaging capital from other financial institutions, leading to financial leverage;
e) other technical aspects that enable greater absorption of the EU funds, also those increasing their certification level.

Introduction of the repayable assistance was preceded by an analysis of needs in a given region with regard to enterprise financing and effective allocation of funds, and also investment priorities. The analysis was also aimed

[1] The sample countries and regions are: Spain (Andalusia), Belgium (Meuse-Vesdre), Great Britain (Merseyside), Portugal (Modernizacao do Tecido Economico), Evaluation of Financial Engineering Measures in Structural Policies, Structural Policies Final Report, European Commission, April 1998.

at enabling correct implementation of implementable financial instruments (*Financial Instruments*…, 2013, p. 39) via the Holding Fund (HF) or by direct engagement of the Managing Authority in forwarding the funds to financial intermediaries (Figure 1).[2]

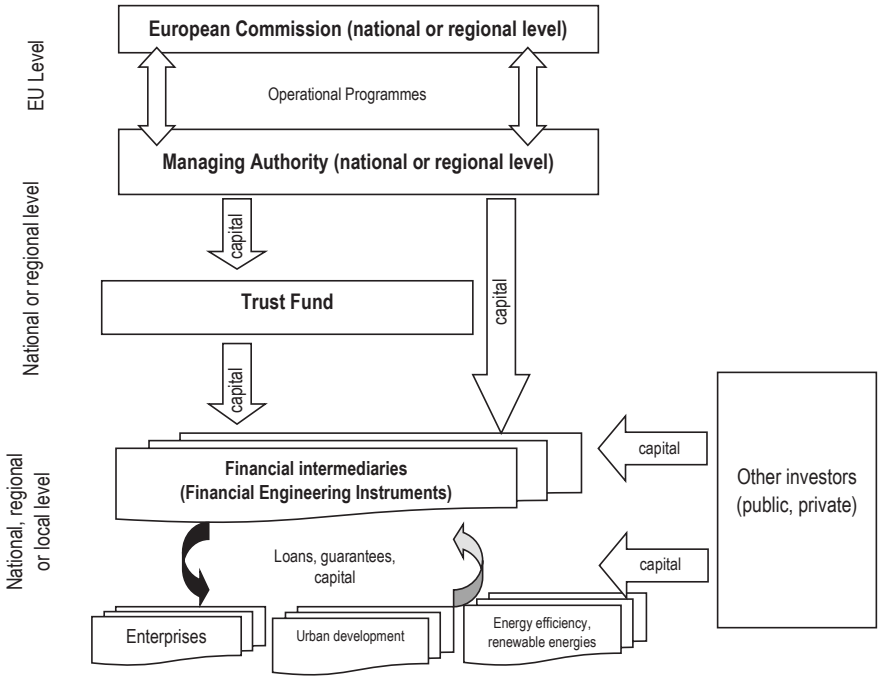


Figure 1. Structure and manner of implementing the Financial Engineering Instruments

Source: own study based on *Financial Instruments*…(2013), p. 39.

Implementation of repayable assistance in the EU

Repayable instruments had been applied in the Cohesion Policy earlier, but a significant increase was seen in the years 2007–2013 when their total amount in operational programmes amounted to EUR 16.4 bn. The amount allocated to repayable assistance in the years 1994–1999 is estimated to be EUR 0.57 bn, whereas in the 2000–2006 period it amounted to EUR 1.2 bn. The assistance was dedicated exclusively to enterprises and implemented in several member states. It was not until 2007 that repayable financial instruments started to play a more substantial role. Halfway through the programming period, financial instruments were implemented in nearly all member states, and in addition to enterprises development their scope included urban areas development and energy efficiency (*Summary of data*…, 2017, p. 7).

[2] That was done in 12 regions in Poland.

Financial engineering instruments may be applied in relation to three areas: enterprises, particularly micro, small and medium, public-private partnerships and other projects aimed at urban development (urban area development funds) and in the area renewable energies and energy efficiency. The contribution made by the Management Authorities at the end of March 2017 amounted to nearly EUR 17 bn, of which over EUR 11.5 bn derived from the Structural Funds (EFRR, EFS), and more than EUR 5 bn constituted the national contribution. Compared to the preceding year, there was a slight increase by 5.5 % (EUR 885.88 m). Analysing the particular countries, it is easy to notice diversification in this respect. Some countries saw a considerable increase in the levels of funds earmarked for financial engineering instruments (Slovakia, Italy, Romania), whereas elsewhere there was a decrease in the funds levels (Greece, the Czech Republic, Finland). The total value of funds disbursed to be managed by the Trust Funds was nearly EUR 7.5 bn (EUR 1.7 bn of national contributions). 94% of the funds was disbursed to specific intermediaries. The Managing Authorities also supplied funds without participation of the Trust Fund (EUR 9.44 bn, out of which nearly 3.5 bn accounted for the national co-financing). In some countries (e.g. Poland, France, Germany, Italy) the amount invested in the final recipients covered the funds which had already been repaid and reused, which shows the revolving mechanism in action, which multiplies the assistance value.

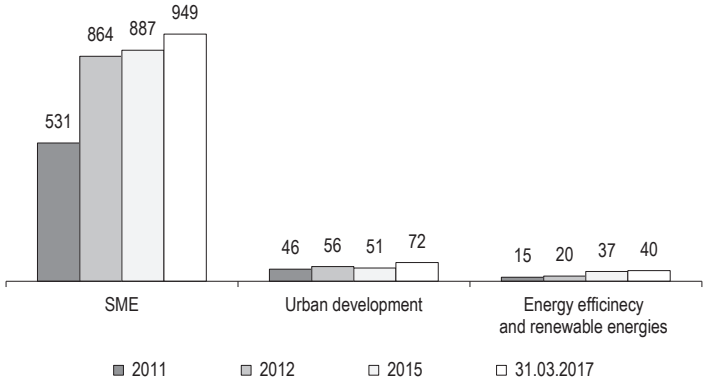


Figure 2. Number of funds under Financial Engineering Instruments that financed the particular kinds of beneficiaries

Source: own elaboration based on Summary of data… (2016), p. 24; Summary of data… (2017), p. 64.

As at the end of March 2017, in the member states there were 1,058 Financial Instruments which took the form of, *inter alia*, loans, guarantees, and venture capital, out of which 89% financed growth and operations of enterprises, 7% – urban development, and 4% – energy efficiency and renewable energies (Figure 2). Among them, there were 77 holding funds and 981 specific instruments, in the form of loans, guarantees, venture capital and others.

Kinds of repayable instruments and end beneficiaries

Member states implemented financial instruments depending on the kind of the final recipient and kind of intervention. The most commonly used form of assistance was provision of guarantee products totalling nearly EUR 4 bn, the average value of which was at the level of EUR 16,000. Also popular were debt products in the form of loans and credits totalling almost EUR 8.5 bn and the average amount of assistance being ca. EUR 45,000.

The third group included equity instruments (EUR 2.7 bn) with an average capital entry amounting to EUR 410,000 (Table 1). The financial instrument also covered a possibility of obtaining subsidies to pay back interest or to cover guarantee fees in connection with loans and suretyships financed with the structural funds, however, their share and significance were negligible.

Table 1. Number of products and amounts disbursed to final recipients by specific funds

	All specific funds	FEIs for enterprises	FEI for UDF	FEI for EE and RES	All specific funds	FEIs for enterprises	FEI for UDF	FEI for EE and RES
	numer of products				amounts (mln EUR)			
Loans	164,171	110,539	1,613	52,019	8,491.47	6,498.13	1,347.62	645.72
Guarantees	193,095	193,095	0	0	3,717.27	3,717.27	0.00	0.00
Equity/venture capital	5,368	5,319	26	23	2,694.52	2,631.42	54.41	8.69
Other products	9,415	9,415	0	0	288.92	210.96	36.28	41.68
Total	372,049	318,368	1,639	52,042	15,192.18	15,192.18	13,057.78	696.09

Source: Summary of data… (2017), p. 39.

Most often the financial instruments supported the SME sector, and these had the longest history, as the first of them were in place as early as in the years 1994–1999. In legal terms, the instruments for enterprises were stipulated in art. 44 of the Regulation of the Council as part of the operational programmes, structural funds that may finance instruments that support the development of enterprises, urban areas and renewable energies, mainly in the form of debt, guarantee and equity instruments (Council Regulation (EC) No. 1083/2006 of 11 July 2006). Out of the total amount, 93% was obtained by entrepreneurs via various forms of instruments. In terms of quantities, 4 countries were dominating (i.e. Poland, Hungary, France, Italy), which established 67.5 % (640) of all the financial instruments throughout the EU (Figure 3). In terms of value, the highest amounts of funds earmarked for financial instruments for enterprises (ca. 60 % of allocations) were used in Italy (EUR 4.4 bn), Denmark (EUR 1.6 bn), Great Britain (EUR 1.17 bn) and Poland (ca. EUR 1 bn). Similarly as in the case of all instruments, the dominating group among the beneficiaries were the micro-, small- and medium-sized enterprises. Until now, more than 300,000 end

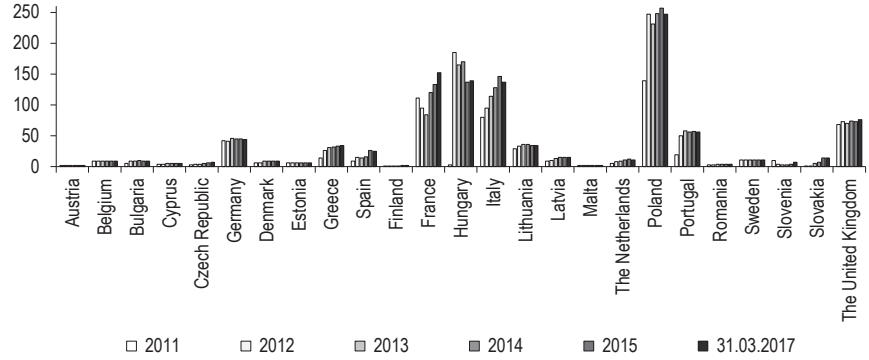


Figure 3. Number of Financial Engineering Instruments for enterprises in the EU in selected years

Source: own elaboration based on Summary report… (2011), pp.13–21; Summary of data… (2013), pp. 27–39; Summary of data… (2016), p. 45.

beneficiaries have availed themselves of financial engineering instruments (of which ca. 32,000 in Poland), out of which over 37% were micro-enterprises, and 28% – sole proprietors (Table 2).

Table 2. Number of end beneficiaries of Financial Engineering Instruments in the EU as at the end of March 2017

Kind of end beneficiary	Number of enterprises	Supported by means of			
		loans, credits,	guarantees, suretyships	venture capital	other instruments
Large enterprises	463	290	158	6	9
SME	221,810	86,848	120,977	4,481	9,504
Micro-enterprises	118,010	48,492	63,060	3,253	3,205
Sole proprietors	88,668	64,113	24,555	0	0
Urban projects	688	667	3	18	0
Other end beneficiaries	3,339	2,917	284	0	138
Total	314,968	154,835	145,977	4,505	9,651

Source: Summary of data... (2016), p. 43.

The provisions of Art. 44 of Council Regulation (EC) no. 1083/2006 made it possible to apply financial instruments and public funds to establish public-private partnerships in order to finance urban regeneration. This in turn enables creation of conditions to generate sustainable economic and social growth in degraded urban areas which would otherwise be doomed to further marginalisation Public funds are to help create appropriate conditions for private capital location, which will lead to regenerating the degraded urban areas and to creating new, attractive jobs. The first financial instrument in that regard was established in 2009, which was preceded by analyses to find out whether providing this kind of financing was advisable. By 31 March 2017, there were 72 financial instruments in 11 member states,[3] out of which 88% were implemented by the Holding Funds. The funds from the operational programmes earmarked for urban regeneration amounted to nearly EUR 1.6 bn, out of which ca. 93% were disbursed to special funds for urban area development. Urban regeneration projects were predominantly financed by means of debt instruments totalling EUR 1.3 bn. In Great Britain, Holland and Spain there was also a small share of equity instruments (26 items) totalling EUR 54 k (Table 3).

Repayable assistance for financing of urban areas is getting more and more popular and shows a noticeable upward trend, especially with regard to the value of funds disbursed to end recipients. Similarly as in the case of the instruments for enterprises, its benefits include the possibility of obtaining financial leverage due to engagement of private funds. The Pomeranian Province is one of the places where, thanks to private funds, a financial leverage was obtained at the level of 1.8, which helped achieve social effects that were important for the local communities (fi-compas, 2018).

The amendment of the Regulation of the European Commission in 2010 made it possible to apply repayable financial instruments to finance renewable sources of energy and energy efficiency. As at the end of March 2017, there were 40 instruments of this kind in operation in 9 member states, totalling EUR 730 m. Most of them were implemented without using a holding fund (23). Nearly 700 m euros were disbursed to final recipients, which

[3] Bulgaria (3), the Czech Republic (5), Denmark (4), Greece (6), Spain (6), Italy (8), Lithuania (8), the Netherlands (3), Poland (12), Portugal (9), the United Kingdom (8).

amounted to ca. 95% of the sum intended for this purpose in the operational programmes. The highest sums were disbursed by Italy, Greece, Slovakia and Great Britain (over EUR 100 m in each of them). The major form of assistance was debt instruments in the form of loans. Only in Denmark and Holland these were equity instruments (Table 4).

Table 3. Main information about Financial Instruments for urban development as at 31 March 2017

Member state	Number of Financial Instruments	Cinstributions paid to FI (mln EUR)	Cinstributions paid to final recipients	
			mln EUR	%
Bulgaria	3	33.00	30.14	91
Czech Republic	5	44.11	41.69	95
Denmark	4	41.75	42.68	100
Greece	6	112.98	98.16	87
Spain	6	195.16	144.85	74
Italy	8	289.19	258.03	89
Lithuania	8	173.42	167.02	96
The Netherlands	3	13.47	13.45	100*
Poland	12	279.88	283.93	101
Portugal	9	132.50	159.76	121
The United Kingdom	8	280.12	199.60	71
Total	72	1595.59	1438.31	90

* The Netherlands, Poland and Portugal payments to final recipients include revolving amounts, interest from treasury management.

Source: own elaboration based on: Summary of data… (2016), pp. 53–55.

Table 4. Main information about Financial Instruments for energy efficiency and renewable energies as at 31 March 2017

Member state	Number of Financial Instruments	Cinstributions paid to FI (mln EUR)	Cinstributions paid to final recipients	
			mln EUR	%
Germany	1	5.90	5.51	93
Denmark	2	20.09	18.66	93
Estonia	1	66.71	71.05	106
Greece	2	101.00	88.75	88
France	4	6.09	5.97	98
Italy	12	155.75	134.68	86
The Netherlands	4	9.94	12.67	127*
Slovakia	1	244.70	244.70	100
The United Kingdom	13	120.23	114.09	95
Total	40	730.43	696.09	95

* Greece, Italy, the Netherlands and the United Kingdom payments to final recipients include revolving amounts, interest from treasury management.

Source: own elaboration based on: Summary of data… (2016), pp. 56–60.

Conclusions

Despite their relatively short history, repayable instruments financed with public funds have become an established form of assistance on the financial market. Following the period when assistance in the form of grants

and subsidies enjoyed great popularity, initially the need to repay the borrowed amount was not enthusiastically welcomed by the market. Nevertheless, as part of the JEREMIE initiative, they became an alternative to subsidies also in Poland, providing numerous benefits. One of them was making use of the market solutions, as a result of which the public intervention in the economy is not as significant as in the case of grants and subsidies. An unquestionable benefit is the repeated use of the funds due to the revolving mechanism. In countries such as Poland or Portugal the funds earmarked for supporting enterprises via repayable instruments have been used twice. Another advantage is the potential for increasing the assistance by involving private funds. At each level of financial instruments implementation there is a possibility of using additional public and private funds, thus increasing their global value. In the EU, the greatest number of private funds co-financed the financial instruments in Denmark (71%), Austria and Latvia (68%), Holland (51%), and Great Britain (49%) (Summary of data…, p. 29), whereas in Poland it was only 1%. In order to increase the level of assistance, it is necessary to consider greater involvement of private funds in financial instruments, which in some regions may significantly contribute to increasing the financial leverage.

Moreover, from the point of view of a long-term development of a given region, it would seem advisable to enhance the regional financial market, or in some cases to establish it. Reinforcement of both local financial institutions (loan funds, credit guarantee funds, development agencies) and instruments specific for each region has built the foundations for establishing regional development institutions. The idea of financial instruments has initiated a new approach to support provided to enterprises (and other entities), and its outcomes have started to materialise in the form of transformations on the local and regional financial markets.

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DETERMINANTS FOR IMPROVING THE FINANCIAL SITUATION OF SMALL AND MEDIUM-SIZED COMPANIES – IN THE OPINION OF ENTREPRENEURS

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ABSTRACT

The dynamics of changes taking place in the environment as well as its variability and complexity create new research perspective. On the one hand, such character of the environment favours the development of companies, and on the other, it creates difficult conditions for conducting business activities and determines a number of threats. Nevertheless, business managers are always on the look for solutions and opportunities that would allow them to achieve higher efficiency of operations. The aim of the research was to identify determinants among which the management of small and medium-sized companies sees the possibilities of improving financial situation. The following research hypothesis was verified: along with the progressing process of globalization of the economy, the determinants of improvement of financial situation of the distorted and undistorted companies are diversified. The research was carried out using the cross-section microdata presented in questionnaires. The survey database contains 100 observations. Respondents were asked about what creates an opportunity to improve the financial condition of companies after the crisis of 2008. The conducted research allows the conclusion that, regardless of financial condition of small and medium-sized companies, the basic prerequisites for their functioning and improvement of the financial situation are economic development and legislation. These two determinants of improvement of financial situation prevailed in the opinions of the surveyed company managers, regardless of the method of classification of entities. Therefore, it can be concluded that the conducted research proved the regularity known from the literature to be true, and that the research hypothesis was confirmed.

Introduction

The dynamics of changes taking place in the environment as well as its variability and complexity create new research perspective. On the one hand, such character of the environment favours the development of companies, and on the other, it creates difficult conditions for conducting business activities and determines a number of threats. Nevertheless, business managers are always on the look for solutions and opportunities that would allow them to achieve higher efficiency of operations.

The aim of this research was to identify variables among which the managers of small and medium-sized companies look for opportunities to improve financial situation.

Financial distress of small and medium-sized companies in the light of national and international research

On the one hand, macroeconomic factors such as turbulent environment, phases of business cycles, economic shocks and balance disturbed on a global scale determine the operation of SMEs, which, in consequence, affects their financial condition. On the other hand, the performance of business entities is affected by a number of processes and phenomena of microeconomics nature. This, in turn, may cause negative consequences in the form of financial distress, crises, insolvency or bankruptcies of companies.

Financial distress precedes the occurrence of a crisis, whereas in the case of insolvency, it may occur either prior, or take place simultaneously. Financial distress is defined in the literature in various ways, depending on the level of details covered in the research and perspective for investigating such disorders. Nevertheless, financial distresses of companies should be identified with different degrees of deterioration of their financial condition. Porada-Rochoń defines financial distress based on the studied literature as a stage in the complex and dynamic deterioration process, which is the result of the impact of a significant external determinant causing a significant deterioration of the financial management, and thus requiring companies to consciously choose the configuration of financial decisions in the adjustment model (Porada-Rochoń, 2013, pp. 75–76). The author classifies financial distress in the fields of diagnostics and decisions. In the scope of diagnostics, there can be distinguished: lack of ability to meet liabilities, excessive debt ratio, negative financial results, or bankruptcy and its probability. In the case of decisions there can be indicated: carrying out the adjustment process (restructuring) and obtaining external financing (Franc-Dąbrowska, Porada-Rochoń, Zioło, Babczuk, 2015, pp. 14–15).

Although the occurrence of financial distress and crisis is a common phenomenon, the research results presented by Dębicka suggest that the majority of companies are prepared for potential crisis situation in their current operations. Moreover, the research shows that small companies are more often prepared for such situation - in comparison with medium-sized companies. When asked about the applied warning tools, respondents (53.6%) indicated forecasting of financial liquidity (Dębicka, 2015, pp. 544–45).

Nevertheless, an important element in the identification of financial distress is skilful selection of signals of the crisis, both those of a financial and non-financial nature, as pointed out by Gorczyńska and her team. The authors emphasize the significance of the concept of the non-compliance gap by pointing to the reasons and the effects of discrepancies between the actual and presented information regarding the financial standing of a company (Gorczyńska, Wieczorek-Kosmala, Znaniecka, 2011, p. 9).

One of the key determinants of the occurrence of financial distress of companies, and thus bankruptcy/ insolvency, is excessive debt ratio. At the same time, it needs to be noted that the structure of SMEs differs

from large companies as it is dominated by liabilities. On the other hand, Mikołajczyk indicates that micro, small and medium-sized companies display limited internal financing possibilities, and thus limited access to external financing constitutes a key barrier to development of such entities. This barrier stems from the fact that financial institutions have limited trust, especially towards micro and small-sized companies, which in the initial stage do not demonstrate creditworthiness. Moreover, the business activities carried out by micro and small-sized companies entail greater operational risk. One of the more frequently mentioned examples is the creative sector, which due to its specificity and individuality is difficult to be measured financially ex ante, which, consequently, causes problems in accessing external financing (Mikołajczyk, 2007, p. 26).

According to the research results presented by Rogowski and Jankowska (2014, p. 113), the most common financial reasons for bankruptcy include the increase in liabilities, including overdue ones, negative financial results and loss of financial liquidity. The results of Szczerbak's research (Rogowski, 2015, p. 163), similarly to the prior ones, indicate high indebtedness as one of the main reasons for bankruptcy of companies. The research results presented by Pawlonka (2016, p. 136) indicated a strong positive statistical dependence between symptoms of bankruptcy costs and debt level (ex post), and therefore, excessive indebtedness leads to an increase in the probability of bankruptcy costs.

In general, the impact of the global crisis on the financial condition of company was negative, which is confirmed by the results of Porada-Rochoń's research. The author investigated the influence of crisis on the financial condition of those companies whose financial condition ex ante was worse (financial distress), and proved that the influence was significant and exposed the instability of financial condition as well as low capability for operating during crisis (Porada-Rochoń, 2013, pp. 148–149).

Campello with his team conducted research on financial constraints of companies during crisis. They recognized ensuring liquidity as the basic problem faced by companies operating in unstable environment (Campello, Graham, Harvey, 2010, p. 470). On the other hand, the results presented by Dos Santos with team after conducting research among 6,184 companies in Portugal in the years 2008–2012 indicate that companies show a high level of debt, mainly short-term liabilities (Lourenço, Oliveira, p. 625). Claessens with his team presented seemingly interesting results (Claessens, Tong, Wei, 2012, p. 375). The authors examined 7,722 non-financial companies in 42 countries and proved that the crisis had a greater negative impact on entities with greater sensitivity to changes in business cycle and in trade, especially in countries more open to trade.

Kahle and Stulz examined indebted companies dependent on banks. The obtained results suggest that the dependent companies do not decrease capital expenditure more than companies that are not dependent on banks in the first year of the crisis or in two quarters after the bankruptcy of Lehman Brothers. Moreover, the companies dependent on banks accumulate funds during crisis, contrary to no indebted companies (Kahle, Stulz, 2012, p. 270).

The research results concerning Irish small and medium-sized companies provide evidence that companies with a high level of financial liquidity before the crisis increased the level of trade credit granted to counterparts, and then improved their financial results in comparison to companies that, ex ante, had a low level of financial liquidity. Furthermore, the level of trade credit taken by financially distressed companies increased (Garcia-Appendini, Montoriol-Garriga, 2013, p. 272).

Lawless with his team conducted research among Irish companies. Its aim was to verify if outstanding liabilities incurred by small and medium-sized companies reduce current expenditure after the financial crisis. The authors proved that a higher level of debt (measured as the debt/turnover ratio) has a significant negative

impact on all measures/indicators of the company's results, in particular investments, employment and financial distress indicators, whereas these results/effects are most visible in the case of sectors and companies dependent most heavily on domestic demand, which decreased after the crisis. Furthermore, the effects are the strongest in the case of companies that were mature before the crisis (Lawless, O'Connell, O'Toole, 2015, p. 45).

Campa and Mamacho-Minano (2015, p. 222) prove that medium-sized companies with higher financial distress level show signs of yield management by manipulating transactions instead of accounting accruals.

As the presented results show, the crisis had, to varying degrees, a negative impact on the financial condition of SMEs in the world, with the degree and scope of this deterioration being different and dependent on a number of external and internal determinants. A decade after the crisis, business environment seems to be more stable, which is reflected in satisfying financial results of Polish small and medium-sized companies.

The report of the NBP indicates that the liquidity of companies remained at a high, safe level in the third quarter of 2016. Debt under loans and credits increased by approx. 5.6% YOY, however, the increase was lower than in the previous quarter, which resulted from a decrease in debt under credits and/or short-term loans. Debt under credits and/or long-term loans continues to show an upward trend (Narodowy Bank Polski, 2016, pp. 75–76).

According to the research results published in the PEKAO Bank Report on the situation of micro and small sized companies in 2017 (2018, pp. 75–76), in general, the financial condition of companies from the SME sector in 2016 and 2017 was satisfactory. However, in 2017, there could be observed real deterioration, which was reflected by a lower percentage of profitable companies. Furthermore, the data prepared by Euler Hermes shows that, in June 2018 in Poland, 101 cases of company insolvency were identified, as compared to 71 in June 2017 (increase by 48%) (Euler Hermes, 2018).

The events of the recent decade, especially between the years 2007/2008, exacerbated the difficulties in the scope of fulfilling company's goals, as well as affected the occurrence of a number of dysfunctions, including those in financial economy, and increased the risk of financial distress.

The aim, methodology and scope of the research

The research was conducted using study material in the form of cross-sectional micro-data obtained from surveys. Survey database includes 100 observations. The research was carried out in April 2015 among 100 small and medium-sized companies, as well as 6 joint-stock companies. The surveyed companies were located in Zachodniopomorskie voivodeship. A questionnaire was used. The respondents were asked 15 questions (6 were included in particulars to determine the respondent profile, while 9 were used to diagnose the phenomenon of the disorder).

Bearing in mind the problem of financial distress of small and medium-sized companies, the respondents were asked, as part of the conducted research, about opportunities to improve the financial condition of companies after the 2008 crisis. The obtained results were divided into three categories. In the first case, the answers were evaluated using Likert scale (where rating 1 was assigned to those factors which, in the opinion of entrepreneurs, have the slightest impact on the improvement of the financial situation, and 5 was chosen for the most important ones). Then, the opinions of small and medium-sized company directors were broken down by the legal forms of the entities. Subsequently, the companies were allocated to one of two groups – a group which achieved positive financial result, and a group which suffered a decline. The results were presented in a tabular form.

The following research hypothesis was verified: after the economic turmoil caused by the crisis in 2008, entrepreneurs expect stabilization under applicable law and economic development.

Research results

Table 1 presents results of the research during which entrepreneurs were asked about factors that create an opportunity to improve the financial situation of their companies. At the same time, the opinions of entrepreneurs were divided into groups using Likert five-point scale, where groups 1 and 2 included determinants of minor importance for the improvement of the financial situation, while groups 4 and 5 presented factors with the greatest influence on the company financial situation. It was found that entrepreneurs deemed the chance to improve financial situation to be low, despite using EU funds coming from the new 2014–2020 perspective, and the implementation of investments as part of cooperation with other entities. In turn, entrepreneurs saw the biggest chance to improve financial situation in the possibility to amend the restructuring and rehabilitation law. At the same time, they also indicated benefits from investments carried out in the previous period. Another important factor for them was the improvement in economic growth forecasts after 2014. The most important factors in improving the financial situation for all managers of the SMEs included improvement of economic growth forecasts, i.e. looking for a chance in good times for the entire economy, as well as amendments to the restructuring and rehabilitation law.

Taking account of the opinions presented by the directors of small and medium-sized companies, it should be stated that after the crisis of 2008, factors important to the improvement of financial situation included overall economic development and legislation that would enable efficient implementation of recovery processes, if necessary.

Table 1. What creates an opportunity to improve the financial situation of companies, including the division of companies into 5 groups

Answer	Number of answers	Percentage of answers			Weighted arithmetic mean of answers
		1 and 2	3	4 and 5	
P19_1. EU financial funds from the new 2014–2020 perspective	100	46	26	28	2.90
P19_2. Investment carried out until 2013, which will generate operating revenues	100	28	36	36	3.14
P19_3. Improved forecasts regarding economic growth after 2014	100	16	48	36	3.28
P19_4. Proposed amendments to the restructuring and rehabilitation law for entrepreneurs	100	28	26	46	3.22
P19_5. Implementation of investments as part of cooperation with other entities	100	46	30	24	2.86
P19_6. Clusters	100	43	24	33	2.86
P19_7. Other answers	100	43	24	33	2.86

1–5 Groups – agreed grading of possibilities to improve the financial situation in accordance with Likert five-point scale (1 – minimum, 5 – maximum).

Source: own research.

Table 2 presents distribution of answers regarding factors conditioning the improvement of the financial situation of SMEs, while taking into account their legal forms. The representatives of sole proprietorship, when asked about the most important factors, most often indicated the effects of previous investments, improvement in the country's economic situation, amendments to the restructuring and rehabilitation law and cooperation within

clusters. On the other hand, the representatives of civil law companies seek improvement of financial situation in the financial funds from the new perspective, and more importantly, amendments to the regulations. The same was true for the opinions of representatives of limited liability companies (the effects of already implemented investments were also important for this group).

Therefore, it can be concluded that there could be observed significant differ-ences in determinants conditioning the financial situation of small and medium-sized companies, depending on their legal form.

Table 2. Distribution of answers, including legal forms of companies (%)

Answers	legal form	SP	Civil law company	Limited liability company
	number of companies	48 (=100)	25 (=100)	21 (=100)
P19_1. EU financial funds from the new 2014–2020 perspective		27.1	40.0	23.8
P19_2. Investment carried out until 2013, which will generate operating revenues		33.3	28.0	52.4
P19_3. Improved forecasts regarding economic growth after 2014		43.8	28.0	28.6
P19_4. Proposed amendments to the restructuring and rehabilitation law for entrepreneurs		39.6	52.0	57.1
P19_5. Implementation of investments as part of cooperation with other entities		25.0	16.0	33.3
P19_6. Clusters		37.5	28.0	28.6
P19_7. Other answers		31.3	32.0	38.1

SP – sole proprietorship.

Source: own research.

The results of the research in Table 3 appear to be interesting. They were presented with the division of companies into a group that generated profits, and the one that incurred a loss. Regardless of whether the companies were in a better (profit) or worse (loss) financial situation, the same factors determining the improvement of their condition were chosen. The most popular included the proposition to amend the restructuring and rehabilitation law. Therefore, it is confirmed that legal measures in which companies operate are an important factor for entrepreneurs. The entrepreneurs who suffered losses pointed to the possibility of improving financial condition as a result of completed investments, as well as connecting improvement of efficiency with general economic

Table 3. Distribution of answers, including legal forms of companies (%)

Answer	net profit	Profit			Loss		
	year	2009	2010	2011	2009	2010	2011
	number of companies	51 (=100)	60 (=100)	59 (=100)	49 (=100)	40 (=100)	41 (=100)
P19_1. EU financial funds from the new 2014-2020 perspective		25.5	25.0	23.7	30.6	32.5	34.1
P19_2. Investment carried out until 2013, which will generate operating revenues		33.3	33.3	30.5	38.8	40.0	43.9
P19_3. Improved forecasts economic growth after 2014		37.3	31.7	35.6	34.7	42.5	36.6
P19_4. Proposed amendments to the restructuring and rehabilitation law for entrepreneurs		43.1	40.0	44.1	49.0	55.0	48.8
P19_5. Implementation of investments as part of cooperation with other entities		9.8	16.7	18.6	38.8	35.0	31.7
P19_6. Clusters		31.4	35.0	33.9	34.7	30.0	31.7
P19_7. Other answers		37.3	40.0	40.7	28.6	22.5	22.0

Source: own research.

development. Financially sound entrepreneurs considered cooperation with other entities and joint implementation of investments less important, which in turn was avital determinant for the entities at a loss.

Conclusions

Small and medium-sized companies constitute a key group of business entities that determine economic development. At the same time, the state of the economy and globalization processes affect entities from that sector. The occurring dependencies are of a bilateral nature. The research shows that there is a group of determinants that is important for the management of small and medium-sized companies in the process of improving their financial situation.

It was found that, in the opinion of managers of SMEs, key factors used to improve the financial situations constitute the overall economic development and legislation that would enable efficient implementation of repair processes, if necessary. It has likewise been agreed that there were observed significant differences in determinants conditioning the financial situation of small and medium-sized companies, depending on their legal form, and thus different proposals for development support should be proposed to entities functioning as sole proprietorship, civil law company, and limited liability company. It seems interesting that the entrepreneurs who suffered losses looked for improvement of financial condition in cooperation with other entities, while the management of companies that made profit focused on other determinants.

The conducted research allows the conclusion that, regardless of financial condition of small and medium-sized companies, the basic prerequisites for their functioning and improvement of the financial situation are economic development and legislation. These two determinants of improvement of financial situation prevailed in the opinions of the surveyed company managers, regardless of the method of classification of entities. Therefore, it can be concluded that the conducted research proved the regularity known from the literature to be true, and that the research hypothesis was confirmed.

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THE CONCEPT AND ASSESSMENT OF THE IMPLEMENTATION OF AN INTEGRATED RAIL TICKET ON THE PASSENGER TRANSPORT MARKET

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ABSTRACT This article presents the concept of an integrated rail ticket with regard to the research on the railway services market, which shows that passengers, first and foremost, expect minimization of effort required to organize the transport, which can be achieved by an integrated railway ticket. The aim of this article is to present the concept and evaluation of the implementation of an integrated railway ticket on the passenger transport market. The research area constituted mass passenger transport (by railway undertakings) and individual transport by passenger cars in Poland. In order to achieve this goal, the desk research method was adopted, and supplemented by the available literature and the results of secondary research published by the Railway Transport Office and the Central Statistical Office (GUS). The latter opens new possibilities for railway undertakings in the scope of analysing passengers' expectations and shaping their communication behaviour.

Introduction

The modern transport market (both passenger and freight transport) is controlled by customers. The surplus of services offered on the passenger transport market is the result of the development of individual motorization, which satisfies a large part of the demand for transport on the market.

According to Eurostat data, the number of cars per 1,000 inhabitants in Poland increased from 261 to 504 in 2000–2013. This is the largest increase in motoring ratio among the 28 European Union countries (The Railway Transport Office, 2017a, p. 7), which means that a potential rail transport customer in Poland has a real choice between a passenger car and a train.

The competition for service purchaser concerns, first and foremost, instruments such as product (time and convenience of travel, physical accessibility and number of connections) and price. Rolling stock is gradually renewed, both by motor and railway carriers (with the participation of the state and local governments), and customer service is improving. Drivers have at their disposal more and more expressways and highways, which in turn has improved the safety of travel by car and significantly shortened the travel time between major cities in Poland. Furthermore, the changes also concern passengers' communication patterns.

The aim of the article is to present the concept and evaluation of the implementation of an integrated railway ticket on the passenger transport market. The research area constituted mass passenger transport (by railway undertakings) and individual transport by passenger cars in Poland. In order to achieve this goal, the desk research method was adopted, and supplemented by the available literature and the results of secondary research published by the Railway Transport Office and the Central Statistical Office (GUS). The latter opens new possibilities for railway undertakings in the scope of analysing passengers' expectations and shaping their communication behaviour.

The passenger transport market

The exchange of information between parties and market participants, as well as negotiations, decision-making, or the examination of supply and demand, i.e., the collective process without which the transaction will not take place, is called the market and is possible due to the existence of exchange relations. The essence of every market, including the transport service market, is primarily the subject of activities carried out within it, as well as entities operating on its demand and supply side.

The basic factors affecting demand in passenger transport are: population, location and degree of concentration of settlements, level of economic development of the region, the society's purchasing power, time spent on various forms of activity, maintenance costs of personal transport equipment in relation to the prices of public transport services, the rank of particular requirements that make up the quality of the service offer. The most commonly mentioned requirements in the literature on passenger transport are:

a) travel comfort, including:
   - an area at the disposal of the passenger when awaiting the transport, lighting, the possibility of making small purchases, the possibility of using catering services (factors related to the waiting phase),
   - guaranteed number of seat capacity, air-conditioning, smooth running, low noise level, ventilation, interior design, good service culture, ease of boarding and disembarking, space for luggage, the possibility to take a rest during travel (factors related to the driving phase) (Wyszomirski, 1994 p. 21);

b) safety:
   - lighting, protection against assaults (associated with the access phase),
   - in means of transport,
   - during the travel (collisions and catastrophes),
   - system giving access to information on routing, time tables, the possibilities of connection and changing trains (related to the changing phase),

- completeness,
- time.

At the same time, there can be observed factors increasing the demand for passenger transport services (especially individual transport) due to social, cultural and professional integration (McLuhan's theory "world – a common village"), the rise in the standard of living and travel propensity related to it, development of tourism, removal of restrictions concerning movement of people, development of housing estates on the outskirts of large agglomerations, development of the school system and the need to obtain education, increasing number of business trips (to companies' headquarters in order to maintain contacts with customers and co-operators, and to increase employees' skills by participation in workshops, training courses, and obtaining certificates).

The supply of passenger transport services is implemented by transport companies and travel organizers possessing their own fleet, as well as travel agencies and other organizations seeking to satisfy the demand reported by potential and real buyers.

The key entities on the rail passenger transport market are companies such as PKP Przewozy Regionalne (the majority of agglomeration, regional and interregional trains), PKP Intercity (selected interregional trains and all inter-agglomeration trains – qualified, including international trains) and PKP Szybka Kolej Miejska in Tricity (agglomeration and regional trains). Since 2005, PKP Intercity has been offering a new category of trains under the name Cheap Railway Lines (TLK) (today: Your Railway Lines), which is a network of day and night connections. PKP assumes that the main advantage of TLK is safety and low price for the journey. TLK's offer is addressed to the less affluent clients, such as students, senior citizens, and pensioners.

An important problem concerning the operation of various carriers is the lack of instruments to coordinate their operation regarding preparation of transport offers, infrastructure operation, settlements, and the lack of an integrated service distribution system – a problem which is especially acute for customers. Requiring the passengers to investigate the passenger transport structure, which is diversified in terms of entities, e.g., by obtaining information, purchasing tickets at different ticket offices, understanding fee relations, preserving rights when changing the transport operator, results in further decrease of the already low evaluation of user-friendliness of the passenger transport system, which is generally considered unfriendly to passengers.

The main segments on the rail passenger transport market include inter-agglomeration, inter-regional, regional and agglomeration transport.

The subsystem of inter-agglomeration transport is characterized by influence of competitors on rail transport, achieved primarily by low prices (bus transport) and travel time (air transport). However, when taking into consideration the implementation of key transport demands such as comfort, travel time and safety, there may be observed a stable position of rail transport, often with an upward trend.

In the interregional transport segment, the essential tools of competition are travel time and price. In case of rolling stock, bus operators with a modern fleet are more competitive, especially when compared to the railway, which still uses outdated carriages. Moreover, many railway lines are still awaiting modernization, a fact that decreases the quality of services in the scope of travel time. Due to the large number of modernization works carried out, travel times offered by carriers are far from the expectations of travellers. The basic tools of competition are therefore additional services, travel comfort, and others.

The following characteristics can be observed in the regional transport services:

- in the scope of commuting to large agglomerations, rail transport successfully competes with individual and bus transport,
- in the scope of regional services, road transport has a competitive advantage due to a greater accessibility and the possibility to organize transport "from door to door". In this transport segment, the competitiveness of railway has significantly increased as a result of the purchase of modern rolling stock offering high travel comfort by the local governments.

Agglomeration transport in the scope of road transport is more and more often characterised by problems regarding congestion and lack of parking space. In this context, there can be observed a relative increase in the position of railway. The problem is low travel comfort due to the still large number of obsolete rolling stock, which is lower than in modern buses or trams.

Development opportunities of rail passenger transport in Poland

The goals for increasing the use of railways in passenger transport in Poland in the coming years, as well as one of the basic opportunities, are the aims indicated in the "Transport White Paper" presented by the European Commission for 2050. In this scope, the experiences and solutions already implemented in other countries might prove quite useful. The country with the highest load factor for railways is Switzerland, where one resident travels 70 times a year. Travel by train in this country is characterized by (The Railway Transport Office, 2017a, p. 11):

- high railway availability (a large number of trains daily that run cyclically, e.g. every hour)
- reliability,
- travel comfort (comfortable and well-sounded carriages available even in regional trains),
- high level of connections with other means of transport and a wide offer of an integrated ticket for all means of transport.

As a consequence, a Pole travels by rail on average 400 km per year, whereas a Swiss 2,200 thousand kilometres, which is 5 times more.

Another driving factors for using services provided by railway undertakings are relatively high costs related to the usage of a car in the city.

The potential of railways in Poland and in other European countries can be compared on the basis of the average number of passenger trains running daily on the statistical kilometre of the railway line. In Poland, there are on average 20 trains running one kilometre of a railway line, i.e., 7 times less than in the Netherlands. The European average in this ranking amounts to 45 trains per 1 km of a railway line (The Railway Transport Office, 2017a, p. 11)

This problem was intensively exposed by passengers[1] taking part in the research carried out by PKP Intercity. The remarks and suggestions submitted had shown that passengers are interested in participating in the creation of a network of connections.

If compared to other European countries, the average number of travels by train per a statistical resident of Poland is not high. An average European citizen travels by train 19 times a year, whereas the Pole only 8. This

[1] Public consultations concerning the new offer presented by PKP Intercity for the 2017/2018 season implemented on 10 December, 2017, were held for one week, i.e., from 8 until 15 March 2017. The interactive questioner at PKP Intercity's website was used almost 3,600 times (*Pasażerowie…*, 2017).

shows the untapped potential of the railways, despite the changes that have taken place in recent years. They are primarily reflected in the gradual increase in the number of travellers (The Railway Transport Office, 2017a, p. 12).

The number of passengers in Poland in 2015 reached the level of 280.3 million, which represented an increase of 4.2% compared to 2014 (269.1 million). This was also the first increase after 2012 (Report ..., 2017). The year 2016 brought another increase of 4.3% and ended with the result of 292.5 million passengers. The last time a similar result could be observed was in 2008 (see Figure 1). The number of 292.5 million passengers indicates, as mentioned earlier, that the average Polish citizen only travelled by train several times in 2016 (The Railway Transport Office, 2017a, p. 12). (The number of transported passengers divided by the number of inhabitants of Poland results in 7.6).[2]

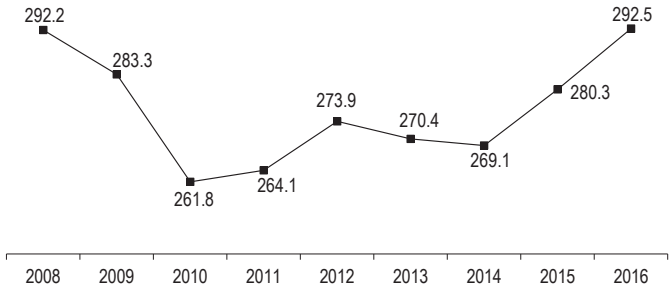


Figure 1. Number of passengers in rail transport in 2008–2016 (in millions)

Source: The Railway Transport Office (2017b), p. 3.

The research results indicate that the most important factors shaping consumer behaviour on the rail passenger transport market include:

a) product (offer) appropriately tailored to the needs of the region, which should:
   - efficiently use modern rolling stock and better infrastructure,
   - include, first and foremost, well-thought-out timetable (adjusted departure times, cyclicity of the timetable and frequency of running trains),
   - offer an appropriate level of service;

b) include a wide offer of an integrated ticket for all means of transport:
   – the infrastructure and location of stops in a manner enabling them to be used by the largest possible flow of travellers, as well as to adapt them to the needs of people with disabilities. It should be remembered that appropriately dense, but not adapted, infrastructure would not encourage passengers to use rail transport. In places where it is difficult to adjust the railway infrastructure, intermodality should be taken

[2] In seeking to compare the condition of railways in particular voivodships, the RTO introduced the term "utilisation rate". It is calculated as a quotient of the number of passengers travelling by passenger trains (presented in the statistics as the number of passengers) and the number of inhabitants of a given area. In Poland, it reaches the level of 7.6 trips a year, which means that statistically in 2016, every Pole travelled almost eight times by train. The utilization rate is equal to the ratio of the number of passengers and the number of inhabitants of Poland. The number of passengers in 2016 was used for the calculation – 292.5 million, as well as the number of inhabitants according to the Central Statistical Office data from January 2016 – 38.4 million. The utilization rate calculated in this way amounted to 7.6. *Wykorzystanie i potencjał*... (2016), p. 2.

into consideration (e.g. construction of parking lots in the form of "park and ride", city bikes, adjustment of the train timetable to city bus or tram timetables, creation of connecting points),

– reviewing and usage of solutions used in countries where railway realistically competes with passenger cars. The comparison of Poland with other EU countries shows that railway has the potential to increase its use in passenger transport.

The overall conclusion is that passengers expect comfortable and functional trains, adequate point infrastructure (stations, terminals, stops), its density, proper service level, timetable adapted to their needs and, above all, minimizing the effort involved in organizing the transport, which can be achieved thanks to an integrated railway ticket. Railway is a system where each of its elements matters and may have an effect on the final choice of means of transport by passengers (the Railway Transport Office, 2017b, p. 42).

The concept and implementation of an integrated ticket for various railway undertakings

There are several railway undertakings operating in Poland that offer various tariff schemes, discounts and special offers. An integrated ticket is an important factor that improves competitiveness of the entire public transport. This solution should go hand in hand with the creation of a coherent and complementary offer including the possibility of changing trains between different railway undertakings and different types of transport (Kuś, 2017).

A passenger who is planning a trip involving more than one carrier, when buying a ticket must very often consider how many they should have with them and whether they have not forgotten to buy some, changing to the train of another carrier.

The concept of an integrated ticket has been reflected in the strategic and programming documents, among others, in Transport Development Strategy until 2020. The strategy envisages integration of different transport modes, i.e.: "introduction of a ticket valid for all transport modes offered by every carrier on a regional and national scale (electronic ticket)."

The works on an integrated ticket carried out at the initiative of the Ministry of Infrastructure and Construction in 2016–2017 did not bring any agreement between railway undertakings controlled by the state and carriers belonging to voivodship self-governments. The issues concerning income settlement and ways of selling an integrated ticket were not agreed upon. Therefore, after a 2-month-period of declarations, discussions and works, two separate concepts of an integrated ticket were implemented in the second half of 2017, which still do not allow passengers to purchase one ticket for rail travel, regardless of the chosen route or carrier.

Since September 2017, passengers can buy a ticket on one form for the travel of three carriers controlled by the state, i.e., PKP Intercity, Polregio and PKP SKM in Tricity. The so-called "Traveller package" allows passengers to purchase tickets for the whole journey at one ticket window, however, it is only available in designated ticket offices. This is a facility for customers that also allows them to save time, as they no longer have to wait in a couple of queues. Importantly, the introduced solution includes discounts and commercial offers of individual carriers, as well as the degressive nature of the tariff scheme. However, the ticket can be bought only at the ticket offices of the aforementioned carriers, which significantly limits its availability.

Since January 2, 2018, Łódzka Kolej Aglomeracyjna (Łódź Agglomeration Railway) joined the group of carriers offering their passengers tickets under the „Traveler Package". Since January 15, 2018, the offer to buy a joint ticket is also available on internet.

On the other hand, since August 2017, "Common Local Government Ticket" has been available. It is a personal ticket that costs PLN 38 and is not subject to statutory discounts. It entitles passengers to an unlimited number of journeys by scheduled trains of cooperating companies. It is valid for 24 hours from the date and time of purchase or the time specified by the buyer. The offer of the "Common Local Government Ticket" covers a total of 62 lines servicing over 950 stations in 12 voivodeships. It was prepared by eight mostly owned by the provincial self-governing companies: Koleje Mazowieckie (Masovian Railways), Warszawska Kolej Dojazdowa (the Warsaw Commuter Rail), Koleje Śląskie (Silesian Rail Carrier), Koleje Małopolskie (Lesser Poland Railways), Arriva (from the Deutsche Bahn Group), Koleje Wielkopolskie (Wielkopolska Railways), Koleje Dolnośląskie (Lower Silesia Railways) and Łódzka Kolej Agglomeracyjna (Łódź Metropolitan Railway). By definition, the aim of "Common Local Government Ticket" is to encourage Polish citizens to travel by train and facilitate their transport between regions. In accordance with the offer, the ticket can be purchased 7 days in advance at ticket offices, ticket machines, via the Internet, or at other points of sale, as well as on the day of departure: on trains and via mobile applications. The evaluation of the "Common Local Government Ticket" project indicates that due to the limited scope of activities of individual self-government railway carriers, the offer does not include many trains which makes it difficult to plan longer journeys on one ticket, not to mention travel from one end of Poland to the other. The practical usefulness of this offer for passengers is therefore rather limited.

Conclusions

After many months of efforts by the Ministry of Infrastructure and Transport, state, local government and private transport operators, an integrated rail ticket still remains in the sphere of plans. The two implemented offers are not even competitive because they mostly refer to separate areas of transport activity. In their present form, they point to the efforts of the parties that have not come to an agreement.

The necessity to return to the concept of an integrated ticket accepted by all carriers is still present. Integration of tariff scheme in case of a carrier providing long-distance transport services, which cover cities in various regions, together with different local carriers, is still difficult to carry out. Therefore, the first step should be to integrate the tariff schemes of local government companies, and only then can such a combined system be integrated with the long-distance carrier's offer. Integration of tariff schemes is easier in case of interregional transportation that provide the same kind of service. The best solution would be a unified regional tariff scheme in Poland. Only then would it be possible to buy a ticket for the PKP Intercity train and then a regional tariff ticket under one system (Kuś, 2017).

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THE ROLE OF CAPITAL STRUCTURE IN THE U.S. ENTERPRISES – THE CASE OF CALIFORNIAN SMALL BUSINESSES

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ABSTRACT

Small businesses face acute problems in accessing external funds. There is a large interest in finding the optimal capital structure and understanding the access of firms to finance, particularly in the process of financing small enterprises. Small firms tend to be bank dependent for external funds and the adequate capital structure is of crucial importance. This paper is concerned with the role of capital structure in the U.S. small enterprises. The data and statistical analysis derived from the empirical research and empirical study that was done in California are discussed. The paper presents the literature review on the capital structure and its theories. Moreover, it identifies the most important factors influencing the optimal capital structure. Last but not least is a short presentation and analysis of the association between particular empirical research questions regarding the capital structure and selected external factors.

Introduction

One of the major problems for a small enterprise is to secure the initial capital necessary for the access of potential entrepreneurs to initial credit so as to start their operations. Because of their small size and the lack of substantial public information about their quality, small businesses face acute problems in accessing external funds. There is a large interest in understanding the access of firms to finance, particularly in the process of financing

small enterprises and startups. Their small turnover usually does not allow to self-finance their business activity by reinvesting profits. Therefore, small companies are forced to use alternative instruments provided by financial intermediaries.

Commercial banks are one of the most important and dominant small business financial capital providers, and a long-term and stable relationship between enterprises and these financial intermediaries is fundamental. Small firms tend to be bank dependent for external funds. On the other hand, banks are cautious about lending money to small businesses, especially start-ups. The banking system for the financing of small enterprises has often been characterized by a short-term approach to secure lending and minimize risk. Some of the reasons are that the staffs of banks have low skills in evaluating and monitoring small business loans, and that banks are afraid of the risks associated with small businesses, especially when borrowing without any tangible collateral.

Moreover, many small enterprises have weak financial structure, do not have a credit history and experience in dealing with banks, and, in many cases being relatively young firms, lack an extensive history from which future performance can be extrapolated. Thus, the adequate capital structure of small (and especially young) enterprises is of crucial importance. Last but not least is the fact that many banks simply do not understand how small business operates.

Literature review

The theories of capital structure have been changing over the years – starting with the theory of a perfectly competitive market to the most modern ones – specifying the hierarchy of the sources of financing or information asymmetry. There has been no coherent theory and the share of external capital depends on the relation between the enterprise profitability and the market interest rate. If the market interest rate is lower than the enterprise profitability, then it is advisable to take advantage of using external capital, and make use of a financial leverage. Unprofitable and riskier firms consistently use greater leverage. Smaller enterprises have a lower probability of survival (greater risk of failure). It is usually reflected in less favorable terms of debt financing, including higher interest rates to compensate for the higher costs of information collection. Financial intermediaries assess small enterprises as being inherently more risky. Experienced bankers or other specialized financial intermediaries can assess the risks associated with new ventures (startups) better than inexperienced insiders like young, inexperienced entrepreneurs and managers. Lending to small business is more likely to be based on collateral. Therefore, lending may not be based on the expected return, but on the access to collateral. On the other hand, collateral reduces "moral hazard" and "adverse selection." Small businesses lacking an access to high quality collateral suffer from credit rationing (*Small businesses…*, 1997, p. 18). The abovementioned small business financial weaknesses heavily influence their capital structure. In case a debt financing is not available, the fundamental question arises: is an enterprise owner willing to share power and dilute his/her ownership in exchange for equity capital raised from external investors? (Rumiński, 2005, pp. 8–9).

The capital structure decision constitutes one of the most fundamental issues in corporate finance. As mentioned above, it considers the choice between debt and equity, which is an essential issue of every enterprise's financial policy. Defined as gearing or leverage, it can generally be described as the share proportion (relative amount of capital) between the two main categories of financing sources – equity capital and debt – used in financing the enterprises' activity. It is crucial to select such a capital structure that minimizes the costs of capital and maximizes the value of an enterprise. A majority of researchers recognize that it is a relation of long-term debt to equity, without

accounting for short-term debt. Such a view is presented by, inter alia, Duliniec (2007) and Jerzemowska (1999). According to them, a capital structure is a part of financing structure, encompassing the structure of liabilities. Its development needs to aim at maximizing enterprise value (Bielawska, 2009, p. 80).

A number of rules and principles are formulated in literature, aiming to facilitate the fulfillment of the main objectives of an enterprise, inter alia, maximizing its market value at a given risk level. Jajuga and Słoński (1998, p. 208) define an enterprise capital structure narrowly, stating that it is a combination of a given company's equity and external capital. It excludes the possibility of the optimization of the total capital financing of an enterprise. The final capital structure is a result of the impact of a large number of various factors. Their variability, variety, and mutual ties make the actions aimed at determining an optimal capital structure to be searching for and getting closer to target values, rather than indicating one optimal value (Golej, Prędkiewicz, 2015, p. 181). The objectives of shaping a capital structure must comply with the enterprise management objectives.

The issue of an optimal mixture of financing is still contentious despite voluminous empirical evidence. Within the couple of decades, numerous studies have been conducted to test major competing theories. The theories of capital structure started to emerge in the 1950s. The development of those theories started with Durand's work in 1952, who, in his search for an optimal ratio of external capital to equity, introduced the concept of cost of capital. According to him, the cost of external capital was an interest on a contracted debt, whereas the cost of equity – the cost of an alternative equal to the rate, free of any risk increased by a risk premium (Gajdka, 2002, pp. 66–67).

A different perspective is presented by Modigliani and Miller (1958, pp. 261–297; 1962; 1963, pp. 433–443), whose theory refers to the relation between the company's debt and its own capital (equity) (Skowronek-Mielczarek, 2003, p. 37). The substitution theory focuses on the interchangeably applied equity and debt. Establishing their mutual proportions should bring about the optimum structure shape of the sources engaged. The pecking order and the trade-off theories provide two different points of view. They are formulated as specific models, and in real life situations they are easy to reject on a variety of dimensions. Both theories, often presented as unifying ones, have been illustrated in specific models with simplifying assumptions. Shyam-Sunders and Myers (1999), Fama and French (2002), and Flannery and Rangan (2006) attempted to distinguish between the pecking order and the trade-off theories. The researchers found conflicting evidence – some supporting and some refuting each theory. The two theories of capital structure (pecking order and trade-off) together with the market-timing theory emerged as the best explanations for the capital structure decision. These three theories have become the finance profession's best explanations for the capital structure decision. Nonetheless, the first two are relevant for privately held enterprises that do not issue publicly traded securities. Whilst many studies tackle the capital structure decision, most empirical work considers large publicly listed firms (Degryse, Goeij, Kappert, 2012, p. 1).

Method and results

A research survey was used in the study regarding the cooperation of the small business sector with institutions of financial intermediation. The survey was addressed to the management of the small business sector operating in the selected key areas of Los Angeles and a study sample comprised of 550 active enterprises.

The equity capital (e.g., personal, angel, venture, stock) constitutes nearly 47% of the financial capital in use by the surveyed businesses. The other two categories of the capital in use are the following: debt (e.g., loan, lines, leases) – 27.9%, and retained earnings (earned surplus) – 25.2% (Figure 1).

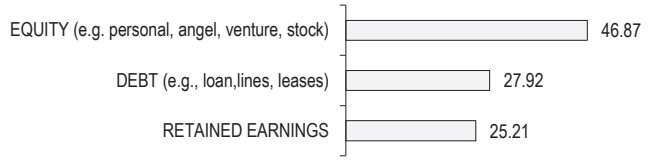


Figure 1. The percentage share of financial capital in use by small business

Source: own elaboration.

Table 1. The percentage share of financial capital in use by small business – statistics

Answer	Min Value	Max Value	Average Value	Standard Deviation
EQUITY (e.g. personal, angel, venture, stock)	0	100	46.87	38.62
DEBT (e.g., loan, lines, leases)	0	88	27.92	29.24
RETAINED EARNINGS	0	100	25.21	27.91

Source: own elaboration.

Considering different types of equity, personal stock is prevailing (69.03%). Angel Investors, friends and family, as well as new shareholders constitute 6.71%, 6.42%, and 3.39%, respectively (Figure 2).

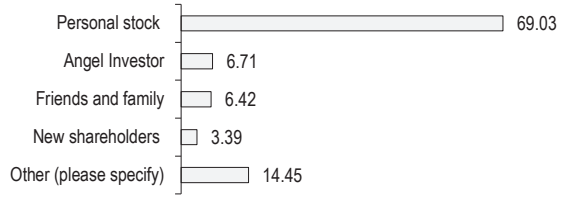


Figure 2. Types of equity in use by small business

Source: own elaboration.

Table 2. Types of equity in use by small business – statistics

Answer	Min Value	Max Value	Average Value	Standard Deviation
Personal stock	0	100	69.03	42.87
Angel Investor	0	100	6.71	23.20
Friends and family	0	100	6.42	19.73
New shareholders	0	100	3.39	16.77
Other (please specify)	0	100	14.45	34.67

Source: own elaboration.

Between the responses to the question please indicate the percentage share of financial capital in use by your business – EQUITY and the responses to the question within the last FIVE years have you looked for a new

primary financial institution?, there is a statistically significant moderate positive correlation. Pearson's coefficient is 0.521628. The average level (arithmetic mean) of equity in the surveyed enterprises is 61.5% (Table 3). Despite the fact that a dependency was observed indicating that the increase in the share of equity capital has an impact on the positive decision to start looking for a new primary financial institution, it is not possible to draw clear conclusions. This relationship can, for example (hypothetically) be associated with a situation in which an investor uses his/her own funds to finance a business venture, and his/her potential for further financial cooperation (raising capital from his/her primary financial institution) has exhausted. Therefore, he/she needs to establish a cooperation with a new financial institution through which it will expand its financial capacity to act. It should also be borne in mind that there are different forms of equity capital, and an example of the situation described above does not determine the success resulting from taking the above action.

Table 3. Pearson's coefficient – the association between questions

	Average (equity) (%)	Standard deviation (%)	Within the last FIVE years have you looked for a new primary financial institution?
Please indicate the percentage share of financial capital in use by your business (equity)	61.50	41.57	0.521628

Source: own elaboration.

Between the responses to the question please indicate the percentage share of financial capital in use by your business (retained earnings) and the responses to the question thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing (level of commissions and fees), there is a statistically significant moderate positive correlation. Pearson's coefficient is 0.461599 (Table 4). This indicates that increasing the level of retained earnings is followed by an increase in satisfaction with the level of commissions and fees. This association is surprising, and, therefore worth pursuing further in-depth empirical research.

Table 4. Pearson's coefficient – the association between questions

	Thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing? (level of commissions and fees)
Please indicate the percentage share of financial capital in use by your business (retained earnings)	0.461599

Source: own elaboration.

Between the responses to the question please indicate the percentage share of financial capital in use by your business (retained earnings) and the responses to the question thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing (level of loan interest rates), there is a statistically significant positive moderate correlation. Pearson's coefficient is 0.545972 (Table 5). This indicates that increasing the level of retained earnings is followed by an increase in satisfaction with the level of loan interest rates. This association is surprising as well, and, therefore worth pursuing further in-depth empirical research. However, it is possible to draw a fairly general conclusion that the improvement in the company's financial

condition using retained earnings can contribute – assuming the effective use of this capital leading to increased profitability – to a better perception of the level of commissions and fees imposed by financial institutions.

Table 5. Pearson's coefficient – the association between questions

	Thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing? (level of loan interest rates)
Please indicate the percentage share of financial capital in use by your business (retained earnings)	0.545972

Source: own elaboration.

Between the responses to the question please indicate the percentage share of financial capital in use by your business (retained earnings) and the responses to the question thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing (the amount of collateral required by bank), there is a statistically significant positive moderate correlation. Pearson's coefficient is 0.546420 (Table 6). This indicates that the increase in retained earnings is followed by the increase in the level of satisfaction with the amount of collateral required by banks. The increase in retained earnings can contribute directly or indirectly to the growth of the company's fixed assets or, more generally, to the improvement of the enterprises' financial standing. In this context, banks will have more opportunity to choose a satisfactory level of security. Therefore the appropriate choice of security (in terms of better quality and thus lower in terms of the level/quantity) can affect the higher level of satisfaction of customers (enterprises) in terms of the amount of collateral required by the bank.

Table 6. Pearson's coefficient – the association between questions

	Thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing? (the amount of collateral required by bank)
Please indicate the percentage share of financial capital in use by your business (retained earnings)	0.546420

Source: own elaboration.

Between the responses to the question please indicate the percentage share of financial capital in use by your business (retained earnings) and the responses to the question thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing (conditions for loan repayment), there is a statistically significant positive moderate correlation. Pearson's coefficient is 0.477527 (Table 7). This points to the fact that the increase in the proportion of retained earnings is followed by the increase in the level of satisfaction with the conditions for loan repayment. The increased level of retained earnings may (but need not) improve the financial condition (depending on the purpose for which the retained earnings will be used, and the investments made by the company), and, therefore an increase in the level of satisfaction with the conditions for loan repayment resulting from the improved financial standing of the company.

This association is interesting and worth pursuing in an extended empirical research on the issue of the motives of the behavior of respondents, i.e., the effect of increasing retained earnings at the perception (assessment) of the loan financial parameters (cost drivers).

Table 7. Pearson's coefficient – the association between questions

	Thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing? (conditions for loan repayment)
Please indicate the percentage share of financial capital in use by your business (retained earnings)	0.477527

Source: own elaboration.

Between the responses to the question please indicate the percentage share of financial capital in use by your business (equity) and the responses to the question thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing (the amount of collateral required by bank), there is a statistically significant negative moderate correlation. Pearson's coefficient is –0.463889 (Table 8). This indicates that the increase in the proportion of equity capital (e.g., personal, angel, venture, stock) causes the decrease of the level of entrepreneur's satisfaction with the amount of collateral required by the bank. It is difficult on this basis to draw firm conclusions without conducting further extended empirical study. The reason for such a relationship can be a perception of bank collateral by investors (business owners, angel investors, venture capitalists, or stock holders) as a means of reducing the flexibility of a company and preventing, e.g., full and unrestricted disposal of company assets.

Table 8. Pearson's coefficient – the association between questions

	Thinking about your business's principal bank, please rate your level of satisfaction with the following aspects of your loan financing? (the amount of collateral required by bank)
Please indicate the percentage share of financial capital in use by your business (equity)	–0.463889

Source: own elaboration.

Conclusions

The determinants of companies' capital structure are the focus of interest of numerous researchers verifying the possibility of applying the theory of finance in practice, taking into consideration the impact of the legal and economic system, macroeconomic situation, and other factors, such as a life cycle stage, debt maturity date, or reporting quality. Finding the optimized financial structure of enterprise is not an easy goal. Managing capital structure allows for minimizing the cost of capital, and accessing low cost capital maximizes venture's value. Therefore, raising adequate capital is a key to growth. Microenterprises, especially startups, face the biggest financial obstacles. Currently, almost every enterprise is characterized by an inadequate proportion of equity capital. New ventures have large working capital, and debt financing comes with maturity and stable cash flows. Investments are usually burdened with high risk, which decreases the possibilities of obtaining external capital. Banks finance projects with a limited risk exposure and those which hold promise of fairly certain profits. If they do undertake the financing of uncertain projects, then it is inseparably bound with an increased credit cost and less favorable terms of financing, which in turn lower the effectiveness of the venture. The degree of indebtedness influences the enterprises' creditworthiness.

Small business is characterized by the lack of required credit collateral. Therefore, it is essential to have a sufficient amount of equity. This type of capital may constitute a substitute for the lacking credit security required by banks. An increase in small enterprise equity results in an increase of its creditworthiness and to some extend – its trustworthiness. The increase in the share of equity capital has an impact on the positive decision to start looking for a new primary financial institution. The improvement in the company's financial condition using retained earnings can contribute – assuming the effective use of this capital leading to increased profitability – to a better perception of the level of commissions and fees imposed by financial institutions. The increase in retained earnings is followed by the increase in the level of satisfaction with the amount of collateral required by banks. The increase in retained earnings can contribute directly or indirectly to the growth of the company's fixed assets or, more generally, to the improvement of the enterprises' financial standing. The increased level of retained earnings may (but need not) improve the financial condition (depending on the purpose for which the retained earnings will be used, and the investments made by the company), and, therefore an increase in the level of satisfaction with the conditions for loan repayment resulting from the improved financial standing of the company. The increase in the proportion of equity capital (e.g., personal, angel, venture, stock) causes the decrease of the level of entrepreneur's satisfaction with the amount of collateral required by the bank.

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CHILDREN'S ECONOMIC EDUCATION – ARE WE EDUCATE E-LEADERS?

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ABSTRACT What we can see in Poland and in Europe for the past 10 years is a significant progress of extracurricular education of children and youth as a result of promotion children's little universities. But at the same time marketplace is constantly evolving. Europe 2020 Strategy has shared competence which will use future employees. In view of the above article, writer have wondered how these further efforts taken by Economic Universities respond to market-trends under which economy will need a-leaders. In accordance with the case study, which the economic education for children is being implemented by her, made out evaluation of the needs of future labour market and modification to improve this program.

Digital Economy – new labour market

Development of artificial intelligence and pervasive digitisation made and will make in future wide changes a socio-economic. How does Ch. Degryse[1] assess "Mirage of Big Data and spite of robots heralds of coming a new

[1] Ch. Degryse is an expert of European Trade Union Institute.

economy and a new world of employment". There is a dynamic changes in type, character and the style of working. On one side the list of professions is evolving, and a lots of them will disappear and appear new ones but all will accompany by the growing fast technology. But on the other side we can say that one stable work station for many years till retirement is a thing of the past now. So we need to think about our career path and development at the primary school stage.

Analysts agree that the next few decades will be a revolution for a work type activity. On this basis, the following findings are made for some of the specific professions. Technological developments will reduce some of the professions because of a technical automation – in Poland it will be about 40% and 57% it will be in OECD countries.[2] We could see these trends in US economy over the 30 years now (Figure 1). The similar study was performed in some part of Poland for specific professions. (Figure 2). At the risk are the bottom line job: repetitive human labor is becoming obsolete and impractical and replaced by the machines because they more effective. Poland is one of those countries, where a low labour costs increased data processing jobs recommended by the global corporations (offshoring and outsourcing). But even if the machine has proven that if it can replace the hand of man, it cannot replace his brain, specific and individual opinion. Wherever comes to professional intuition, connection between people or experience turns out that a human is irreplaceable.



Figure 1. American labour market

Source: *Special report. The impact...* (2016).

[2] DELab UW: in Poland it is an estimated reduction of 40 % professions, but in OECD countries 57%. Poles are aware of in decades to come the most of the task will carry out by machines – said 64% surveyed, although 40% believe that this changes will affect their occupational status. In comparison in American society awareness of increasing automation is similar, but only 20% surveyed involve this in their job profession. See: *Aktywni+*... (2017). Oxford University suggest that 63% workplaces in transport, warehouse, logistics and marketing will be automated. See: *Technology at work*... (2017). McKinsey: technological changes may cause reduction of 45% all jobs, 5% jobs will disappear completely, but in the case of highly developed countries transformation rate will be slower but the final scale will be much more extreme for the Labour Market. See: *The AI revolution*... (2017) and *Digital dividends*...(2016).

The question arises of whether automation is a chance or risk? On the one side increase the efficiency of work and eliminate mistakes but on the other increase chance of technological unemployment and make social fracture in community. So now in IKEA or Castorama customer can make an invoice, so what with existing customer service position? Customer service advisor have to change to help customers make an decisions, recognise their needs, to analyse and resolve problems and help build customer experience and create added value for them.

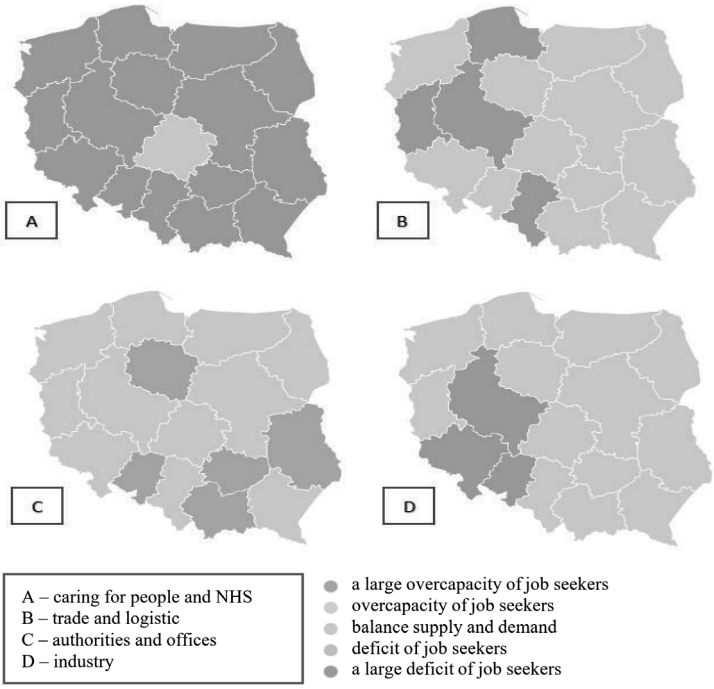


Figure 2. Labour market in Poland in 2017

Sources: elaboration on the basis: *Aktywni+*… (2017).

The continuing robotising make a one more thought – lots of socio-economic problems, will solve if we cut the work time. Additional free time could be another value added to labour market. In 1930 J.M Keynes predicted that within next century productivity increase so will help reduce weekly working time to 15 hours.[3] Currently 64% Poles (80% students) thinks that digitisation and automation is going to make more free time for the people (*Aktywni+*…, 2017).

On the purpose we look closer into students – future employees generation "Z". Changes in the labour market it's not just about the structure of professions, the changes also include style of working – follows phenomenon

[3] Kaynes was thinking that job is a necessity. So people will be working no longer than it's needed. His prognosis were popular in the US till 70s of 20th century. The working week was shortened down from 47 to 39 hours. The job productivity is still growing like it was predicted by the economist. So why the process had stopped? There was a very interesting discussion about working hours leaded by: Zaremba (2017).

precarity,[4] digital technology encourages freelance self-employment (uberisation – Piwnicki, 2018). In the most recent study for Gumtree.pl website developed by DElab UW[5] shows that – 54% surveyed Poles can assume that in future they will need to work in a few jobs to make a living. Unskilled workers (70%) are fear most, and the least are traders (43%). And even though other things will change in understanding of the social security young people prefer to be as the freelancer's. In 2016 14% employed people in Europe at the age of 15 to 64 had their own business, in Poland it was 18%. Evolution of employment let people work independently, flexible, no matter of their employer or let people work for many employers. Among the social-economical consequences we could also defined some less positive impact. Possibility of work from home is making an excessive control on employee by the employer, and he can lost his balance between work and home life. Distortion of the work-life balance can affect his work, rest and on the end can make professional burnout for him. Which will result a psychological counselling in future.

Challenge for education – key competences

Idea of life-long learning (LLL) it's a quality of modern economy. Dividing active education to school period, career and retirement is now totally outdated. Strategy of lifelong learning implemented by various EU countries, is based on a set of key competencies adapted to dynamic changes and innovation approved by EU.[6] To meet market expectations we cannot ignore educational process of development the digital competences.[7] The majority (83%) Poles believes that these competences are and will be necessary in the labour market. 82% Poles also think that studying programming should be mandatory in Primary school. Paradoxically, however the digital competency of Poles are the lowest in the Europe (Figure 3). Statement of the digital economy and society index (DESI) for a various European countries illustrates, how big gap is between Poland and highly-developed countries in this area. Relatively the weakest areas in Poland are: using internet and deployment of the digital technology in companies. 20% of Poles never used an internet, 57% of those surveyed uses an internet everyday and 39% use a computer at work, where in EU is adequately to 71% and 50%.[8]

Digital competences yes – there is some areas that a contact with other people is necessary such as: education, sport, culture, medicine or care for someone there will be support by the technology. Citing A. Toffler – "illiterate the 21st century won't be person who doesn't know an excel or coding but people who can't learn new things and wean themselves from an old ones". We should not learn everything it's just enough to be a specialist in what we want to do in future, and to use technology to improve our work at the same time. In addiction to digital

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[4] Precarization the job is uncertain because of the popular activity forms which can't guarantee a permanent employment, payment stability or insurance.

[5] Digital Economy Lab Warsaw University from 4 years is realizing a Gumtreee.pl strategy – is diagnosing a labour market and giving the right solutions to the members of the market. Cited raport "Active + Future labour market" was created as a part of 4th edition of the programme "Start your Career" which aim is to provide trends, which in the next few years will be educate reality of polish workers and traders. Reports are used as substantive base of pupils workshop activity in all school helps shape their future professional development path.

[6] The most important economy competency are: possibility of communication in native language and other, mathematical, science and technical, ability to learn, social and civil. See *Recommendation of the…* (2006).

[7] Digital competency it is an ability to use the computer and internet to communicate. Looking for information and solving problems at home and at work.

[8] The polish IT specialist are one of the best in the world. They are winning the most prestigious prizes. 3rd place ranked HackerNet, 5th in TopCoder. See *Aktywni+…* (2017).

competences we should develop social skills include work as a part of the team.[9] Digital economy will deliver a creative, unorthodox actions or cognitive skills in several profession.

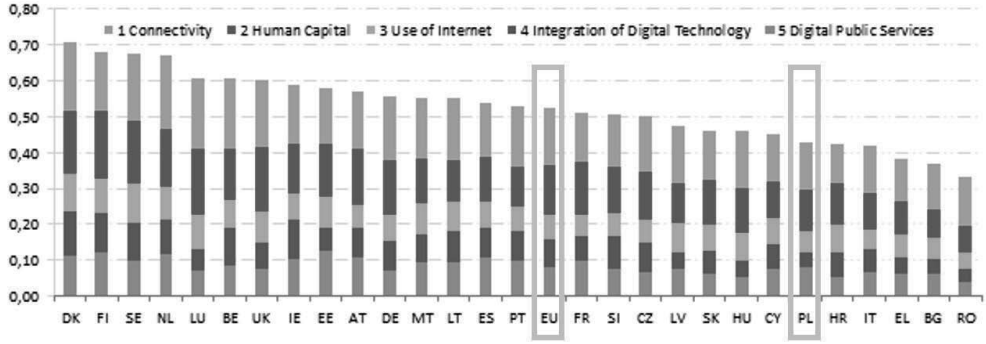


Figure 3. DESI 2017

Source: *The Digital…* (2018).

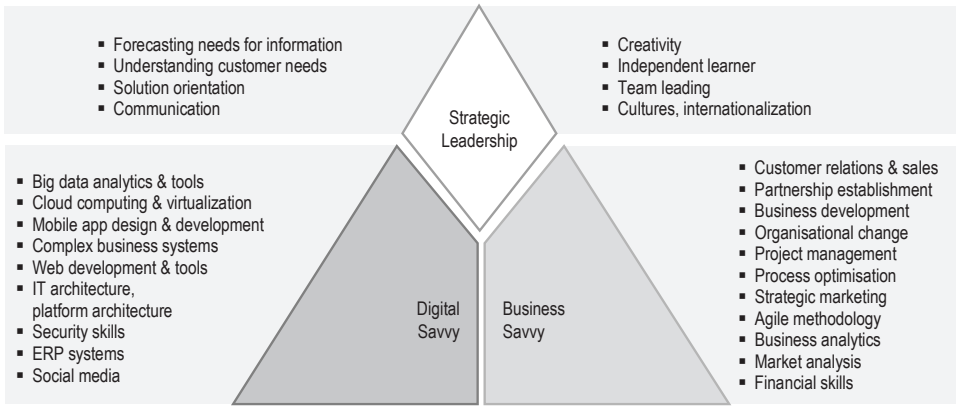


Figure 4. Digital economy needs e-leaders

Source: *European Conference…* (2017).

In digital economy the highest paid job will be the one with advanced analyst data. Digital revolution brings with it access to the magnitude of information what extends possibility but also is making an information chaos. In the chaos it is difficult to verify reliability of the submitted data and also to focus on the key issue. Cooperation with artificial intelligence let work more efficiently and minimises mistakes, but also is forcing us to build additional abilities – analysis and interpretation of the facts. In digital economy there will be a need for "e-leaders". By 2020

[9] We are talking about social intelligence, which is restricted to emotion intelligence it means cooperation with other on the basis of understanding their needs and clearly show your own opinion. See Albrecht (2006).

EU economy will need even a million of these workers. Who is the e-leader? Is the person who can connect digital, business and management competencies all together (Figure 4). This is an opportunity for creative sociologists and economists.

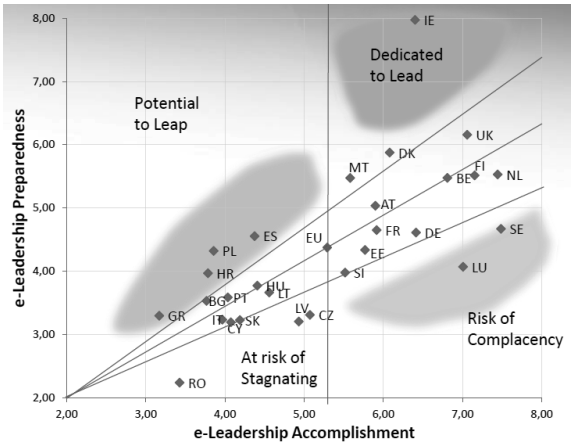


Figure 5. Accomplishment vs. Preparedness Plotting in Europe

Source: *European Conference*… (2017).

Poland is in group of countries with high outlook on growing their e-leadership skills maturity also as a result of Education programmes and graduates. Other countries were highlighted because other reasons, for example: Ireland for executive education and LLL, Malta for Policies and initiatives, Denmark for Graduates & junior practitioners and LLL too and finally Spain for Executive education.

Children's University... E-leaders?

One of the element the concept of life-long learning is continuing training, defined as set of actions formal and informal by which adults can expand their knowledge, developing their individual talents,establish professional competence allowing them to meet their own needs and also to adapt the expectations of the society and labour market.[10] They say in the definition of UNESCO about adult education not because in process of life- long learning we are neglecting children. According to the author, definition was designed to underline a need for a continuation of school after graduation. Furthermore, at the school stage children should be made aware of improving their skills in future adult life.[11]

Most valuable element of children after school education is children's universities. Their popularity is growing although their existence are dependent on government funds. First children university was founded in Krakow in 2007 as a join initiative of the Foundation PAIDEIA, University of Jagiellonian and Polish Academy of Science

[10] Recommendation in case of adult education development (Nairobi 1976), Hamburg Declaration (1997). See www.unesco.pl.

[11] Continuing education with regard to adults there is in the Polish Law. See Ustawa z dnia 14 grudnia 2016 r… Discussion about entities covered under continuing education led: Półturzycki (2006).

in Krakow (Ziółkowski, 2016). Five years earlier was founded first Children university in Europe – it happened in University in Tubingen as a result of cooperation between university staff and German magazine journalists (Jansen, Steuernagel, 2006). This idea was so successful it result a group of universities under the name of "Die Kinder Uni".[12] In 2005 this idea was honored by the European Commission and rewarded as Descartes Academy. Consequence of this was initiation of Framework Programme of EU – "European Children's Universities Network" in 2009, representing a group of children's universities from different countries including Poland.[13] Now in Poland we have about 200 initiative of children's universities. In community is being discussed about all initiatives and are they all children's universities.[14] There is no regulations made about children's universities but EUCU.net proposes definition under which children's university is made which is: university (professors and facilities) and children, and in this project we cherish qualities such as : curiosity, open mind, critical thinking and also raising the citizens of the world (Figure 6).

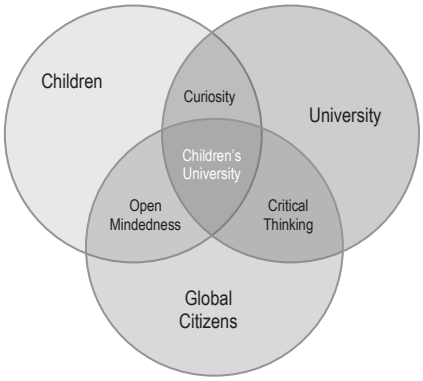


Figure 6. What is a Children's University?

Source: https://eucu.net/video.

An example of this initiative which corresponds to cited definition is Children Economic University (EUD) implemented by: Foundation for the Promotion and Accreditation of Economic Education. (FPAKE) and regional universities include University of Szczecin.[15] Students of EUD are pupils in age between 10–13 years old. A sister project is carried out for older pupils – 14 till 16 years old under the name of Academy of Young Economist (AME). In both group we are doing research about children economical awareness and maturity within methodology FPAKE.[16] In this article we will use some examples about building potential in children and young people regarding their future career and being e-leaders.

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[12] www.die-kinder-uni.de.

[13] www.eucu.net.

[14] See http://sliwerski-pedagog.blogspot.com.

[15] See www.uniwersytet-dzieciecy.pl.

[16] The purpose of the study is diagnose students attitudes in area of business and economy and also assessment level of knowledge and understanding the basis of these areas. A tool for achieving research is "The study of consciousness and economical

Research results made in University of Szczecin[17] are showing that most of after school education projects provide main source of economic knowledge. Research results are showing that after school education projects are very productive for children who wants build their economic knowledge, they also made children inspired to made a home discussion with their relatives about social-economic process, mostly at the micro level (55% children is taking part regularly). 43% surveyed answered that they had economic classes before in their school. This is a good prognosis to strengthening cooperation between different educational institutions. This cooperation will lead to make future knowledge workers (Collins, Porras, 2008).

Children recognise a lot economic idea's but sometimes they can't defined them into a right context. Children shows significant economical interest, they know well the money matters. They operates great funds management as most of them have their own pocket money. In younger group 93% children declared that they have some savings but in older group it was only 71%. Most of the children demonstrate a great basis economic knowledge and the extension of economic knowledge will be a strong success factor in future (Figure 7).

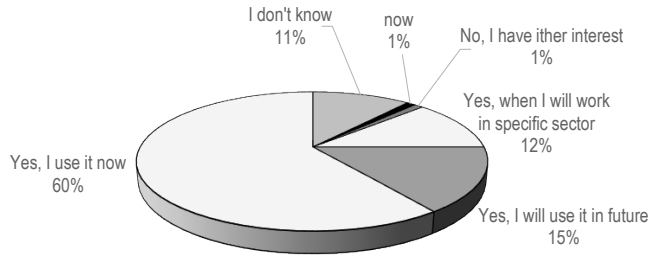


Figure 7. It's worth learn economy?

Source: Elaboration on the basis of Methodology FPAKE.

Program of the economic education is develop by the results of used studies. This program include elements of education strategy e-leaders (see Figure 4)

1. Strategic planning committee including prediction need for information, analyse clients needs, great communication, looking for creative solutions, ability to learn and team management.
2. Business expert, who can to manage project, analyse market, optimize management processes and maintain good relations with customers.

A onetime thing in Szczecin was implemented a project with the cooperation between German schools. This project helped introduce in to education program functioning international aspect. More care we should

maturity template". Test consists 4 parts. Two first are designed to establish a level of knowledge of economical meaning, although first self-esteem is verified by the students themselves about their economics and management zone. 3rd part allow identify at what point participants are agree with specific ideas and stance towards economic developments. In the last part attention applies to the evaluation of participants commitment and their motivation to learning economy. Author coordinate research work in the facility in Szczecin. See www.fundacja.edu.pl.

[17] In the study participated 96 people, of which 64% were children form the youngest group. In both studies most of population were boys, were some of the participated they didn't say their gender.

give to partnership subjects and business analytics. In economic education programme has not been taken under consideration of knowledge of IT elements. Partly they been used in class with children and their parents. To effectively implement the strategy education of e-leaders, we need to improve Big Data knowledge, data processing in the cloud, expansion of mobile applications, social media and network security. It is possible and there is an implementing team at Szczecin University, that works on program which will be answers to a new career trends and would allow us to develop competencies valuable for employers.

Conclusions

Labour market is strongly changing. This is the result of progressive digitisation accompanying by the automation. Changes are getting stronger. Future employee – or perhaps I should say future contractor's work – should be characterised by an additional, often completely different competence, interdisciplinary skills, holistic way to the project and also more elastic work organisation. It is predicted to economy that it need e-leaders, those will connect economic knowledge, management knowledge and IT together. In the education system have occurred innovation forms of education in the form of childrens universities. This will reduce a time of aim person professional development who is a child now but will be an employee in the next few years. It also diversify ways of showing the knowledge, learning additional skills. In that way children's economic university in a huge part develops future e-leaders. Following the introduction of IT elements to the program and keep it for good will allow us to do it in very comprehensive way.

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FACILITATED WORKSHOPS AND THE FOCUS GROUP AS A WAY TO GAIN OPINIONS AND FORMATTING A NEW PRODUCT WITH THE Z GENERATION

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ABSTRACT The aim of the article was to show how to obtain opinions, as well as to shape a new product for the generation of Z. The article focuses on the use of selected qualitative research, in which one can learn about what young people are directed by. Through their direct involvement, one can observe what aspects play a special role for them. In the first part of the article, the author presents the characteristics of the Z generation and selected research forms. Next, the results of focused group interviews and the results of the supported workshops were presented, which were an integral part of the study. The aim of the study was to get to know the way of thinking of the Z generation, the determinants that guide it in the framework of purchasing decisions and the identification of forms of marketing communication that they identify. This goal has been achieved by involving the participants into the role of, on the one hand, producers of a given product, on the other, researchers who have to determine what customers like them are paying attention to. As a result of focus research, information about elements that capture the attention of the young generation while shopping was obtained. As part of the workshop, a simplified proposal for a communication campaign for the selected product was developed. The combination of both methods enabled the active involvement of all participants and the observation of what particular elements draw attention of young consumers in their decision-making process. Due to volume restrictions of publication the results of the research were focused on the methodological aspect, ie the results of the use of selected research forms, rather than on the results of the research topic. The results and conclusions from the adopted theme constitute a separate article.

Introduction

Nowadays, getting to know the opinion about a given product seems to be not so difficult to achieve. Depending on the desire to deepen a given issue, you can apply quantitative research – if you are interested in, e.g., how a wide range of recipients will find a given product, or qualitative research, when, for example, we want to know the reasons for purchasing decisions. Is the current classical use of research methods sufficient for the younger generations

of Z and what if we want to shape a new product for them? So how to get information from the younger generation, which also participates in the process of purchasing decisions, so as to know their actual opinions and behavior. The author in the article focused on a qualitative research approach. She presented the results of research, in which both focused group interviews and facilitated workshops were used.

Means of communication of generation Z

The manner of communication and the values we follow illustrate, to a large extent, belonging to a particular generation. This determines particular habits, attitudes, expectations, behaviors and susceptibility to various arguments or motivational stimuli. The ability to recognize these differences allows you to effectively reach with a specific offer.

Generation Z, also known as generation C, refers to people born in the 90s. The social life of the generation Z is largely carried out on the Internet. The Internet is most natural environment in which they were raised, but it does not mean that the real world does not play a significant role for them. This is confirmed by interviews with representatives of this generation conducted by Natalie Hatalska (2015). In their statements, the young generation of Z indicated that they prefer much more direct contact with their peers than through digital media.

This generation reveals accelerated development of children, mainly under the influence of the media and advertising of the so-called KGOY phenomenon (kids getting older younger). Instead of traditional toys, they prefer dedicated versions of electronic gadgets, cosmetics or fashionable clothing. In addition, brand awareness is also picked up early (Aniszewska, 2015, p. 3). As shown by the results of the study conducted by the YouGov global portal (*YouGov: Children*..., 2018), teens want to co-decide on shopping. As many as 48% of teenagers between 11 and 16 regularly get pocket money, which they want to spend according to their own taste (Olczyk, 2017).

Advertisers are aware of the potential of the youngest. They know that the young generation recognizes and at the same time exerts a great influence on the parent who makes purchases, hence they value the possibility of making them unofficial brand ambassadors (Olczyk, 2017).

Although the generation is much more resistant to advertising messages, they pay attention to them. However, as Duncan Southgate of global brand director in the media & digital department of Kantar Millward Brown: "Members of this Generation grew up in a world where many things are available on demand, and the choice is almost unlimited. This is what shapes their expectations towards advertising. They are much more attracted to the advertisements that enable them to create or shape the course of events together "(*Pokolenie Z*..., 2017). Based on the results of the "AdReaction: Engaging Gen X, Y and Z" study, conclusions have been drawn that the generation Z draws more attention to the creative approach to changes. They prefer advertising, which can be affected by them. They want to co-create a story or see what happens when they make a decision. They are better oriented towards brands that give them the opportunity to influence the development of events (31% in the Z generation versus 25% in the Y generation), they can choose an option (28% vs. 25%) or make a decision (27% vs. 22%) ("AdReaction: Engaging Gen X, Y and Z").

Characteristics of the applied research methods

Qualitative research methods have a special application in research related to the introduction of new products to the market, especially at the product development stage. Feedback from potential customers at an early stage of creation helps avoid costly mistakes and increases the chance for market success. The concept that can be

presented to the respondents often requires many explanations of the person conducting the research, hence the quantitative research does not apply. The reactions of potential buyers are also difficult to predict, which makes it impossible to create a questionnaire with relevant questions (Maison, 2007, p. 9).

The main goal of qualitative research is a broader understanding of reality and the studied area (Maison, 2007, p. 9). Qualitative research is primarily a careful observation and analysis what the participants are not allways aware of. The methods of qualitative research include focused group interviews commonly called focus studies. The history of development of this method is presented by numerous foreign authors (including Stewart, Shamdasani, Rook, 2007; Savin-Baden, Howell-Major, 2013; Carey, Asbury, 2016). First publications describing and presenting the use of group interviews dates back to 1913 (Strong, 1913, pp. 393–395), despite the fact that they were not yet called group interviews. Subsequent authors who used this research method in their projects include Poffenberge (1925), Bogardus (1926), Moreno (1931), Laxarsfcld (1934, 1937). Also during World War II, focus studies found their application (Morgan, Krueger, 1993). In addition, the development of focus groups is associated with the research programs of P. Lazarsfeld, R. Merton and their collaborators (Merton, Fiske, Kendall, 1990). It was at this time that the focus was first held and called the focussed interview.

As we can observe, this method was popular mainly in the area of psychological and sociological social research. Only after the war did they find widespread use in marketing research, thanks to which in the 80s of the twentieth century, they re-experienced scientific flourishing (Lisek-Młynarska, 2013, p. 14).

The focus group methodology is common to many disciplines, but its application can be varied. According to the definition proposed by David Morgan (1997), it is a research technique in which the researcher collects the information necessary for his/her purposes through cooperation and interaction with a group of participants. In addition, focus groups rely on meeting people who do not know each other, but who have common experiences or are well familiar with an issue. They are best suited to environments or groups in which its representatives are willing, open to communication and have knowledge of a given topic, and the facilitator of the group has the appropriate skills (Carey, Asbury, 2016, p. 15). The scenario is a characteristic component of the focus study. It is treated as an "interview plan, defining the main issues that should be discussed in the interview, and determining the time that the moderator should devote to discussing these issues" (Maison, 2007, p. 16).

Analyzing literature from 20–30 years ago, many of the characteristic focus features presented there are currently not required. Modifications apply to aspects such as the duration of the interview, the number of participants, the place where the interview was conducted or the freedom to conduct the interview. The changes are not the result of research assumptions, but the experiences of moderators who, while conducting the research, sometimes do not strictly follow the rules, obtain more information than when they conduct it in a traditional way (Maison, 2001, pp. 16–17).

Focus studies also use projection methods that further stimulate the group's work. These methods are a vast source of knowledge about the motives of behavior, goals, aspirations and ways of perceiving the surrounding world of the individual. The basic feature of projection methods are ambiguous, unstructured stimuli that force the individual to act creatively, to speak in accordance with his/her own thoughts and feelings. In the projection method, the analyzed material may include verbal stimuli, drawings, photographs, play techniques, etc. (Kranc, 2018).

Facilitated workshops are intense meetings during which participants work together on tasks related to the development of a specific product (Schalken, Brinkkemper, Vliet, 2004, pp. 135–144). As a research approach, it is an open choice of methods that allow us to interact, and improve and moderate our project research in time [Ørngreen, Levinsen, 2017, pp. 71–81).

In 1948, Osborn described for the first time the workshops as a method of creative group problem solving (CPS) known as "brainstorming". As we can read in the Danish dictionary (2016), the use of the term "Workshop" became popular in the early sixties, when Osborn's idea and related social issues spread on a large scale. While Osborn's CPS approach developed, a wide range of various workshop formats appeared that were specific to a given industry or discipline (Ørngreen, Levinsen, 2017, pp. 70–81**).**

Workshops are specifically designed to fulfil a pre-defined, though not predictable, purpose. They shoud promoted genuine participation. The participants are expected to actively participate and influence the workshop's direction. The group is small to give everyone personal the chance to be heard. By the workshop participants expect an outcome like the generation of new insights, suggestions, (re)designs of a product, or innovation (Ørngreen, Levinsen, 2017, pp. 70–81).

During the workshop, participants work on developing a consensus of ideas and work out joint solutions. The facilitator is expected to keep track of whether the goals set at the beginning have been met. This saves time and ensures that nothing is left out.

As research and conclusions from the workshops conducted as part of the research by the research team of Rikke Ørngreen and Karin Levinsen Research center for VidEO, ILD-lab, Department of Learning and Philosofy, Aalborg University, Copenhagen, Denmark from Research center for VidEO, ILD-lab, Department of Learning and Philosofy, Aalborg University, Copenhagen, Denmark (Ørngreen, Levinsen, 2017, pp. 70–81) demonstrate: "the workshops play a special role in identifying, articulating and exploring poorly defined or fuzzy challenges in research areas." In addition, the workshop method helps to reveal unrecognized or unacknowledged dead spots to participants. The authors presented the advantages and difficulties of conducting workshops, pointing to the wide possibilities they provide.

The author, referring to the advantages and methods of obtaining and engaging the respondents by means of both research methods, decided to apply them together during the research conducted with representatives of the Z generation. According to the author, this is the best way to get complete feedback from the group. It is a generation that expects the world to "revolve around them and for them". Personalization, the ability to choose your own way in every situation, and above all individual treatment and respect for the opinions, are ways to win the hearts of the youngest generation of consumers (Bakalarska, 2016). Both of these methods can provide them. On the one hand, giving the opportunity to listen – during focus tests, on the other hand – in support workshops, as a result of which a product ideal for them will be created.

Methodology and results

Before conducting the research, the moderator made a series of participant and non-participant observations among the younger generation of Z, in order to properly shape the study, in terms of the manner of communication, time, place and form of its implementation. The tests took place in August and September 2017 in the focus group at the Faculty of Management and Economics of Services at the University of Szczecin.

The group of people participating in the first study included pupils from the primary school who were invited to participate in the workshop. The second group was represented by junior high school students who participated in the workshops as part of the West Pomeranian Science Festival. All participants of the study were informed about the purpose of the place where they are staying. Both groups were divided into smaller groups of 6–8 people. Both studied groups, except for focus interviews, participated in assisted workshops.

For the purposes of the research, an unstructured, free scenario was prepared, containing thematic areas under which the moderator held discussions with the participants. It should be noted that observation of the group in terms of the degree of concentration and commitment was particularly important. Generation Z rather quickly gets bored, which is manifested by a reduced level of communication or expressing views that are only meant to "show up in the group." At that time, the statements are no longer one's real views. With this in mind, it was assumed that the duration of the study should not exceed one hour. The results of the research were focused on the methodological aspect, rather than on the results of the research topic. The results and conclusions from the adopted theme constitute a separate article.

In each of the studied groups, the aim of the study was to recognize the preferences of the selected product, i.e. chocolate. Participants were asked to share their opinion about it - as regards the taste, price, quality preferences, etc. The projection method was used and the participants were to take on the role of the Chocolate Factory owners who want to introduce a new product to the market. In this way, the participants of the study were to reflect and answer the question, what elements would draw attention and what would be the preferences of people from their generation. As part of both groups and its individual subgroups, group leaders stimulated other people to ask questions. Sometimes the other participants agreed with their opinion, but they also loudly objected when they had a different view. In the focus part in both cases, although one of the subgroups in the initial phase of the discussion, stimulation of the moderator to express their opinions more openly was required. In addition, some people, even those encouraged by the moderator, were concerned about public speaking or tried to divert attention from themselves through jokes. During the course of the conversation, especially in the part concerning communication, and especially advertising, all people in the groups have become active, which shows that despite claims that ads are not watched or are not interesting for them, their reactions denied it. As part of the speech, one could additionally observe active non-verbal communication that allows to receive confirmation of the views expressed. In individual groups, it was also possible to identify wizards - originators who sometimes proposed non-standard solutions. After the end of the focus section, the group eagerly began work on the implementation of the workshop project. It was noticeable that people who were previously less active, became more open and willing to act. As a result of the supported workshops, the previously appearing statements from the focus studies were additionally verified. During the process of creation, some of the elements that in the first stage of the research played a significant role for them, when implemented, e.g., an advertising spot, they went to the background.

The conducted focus studies supported by workshops allowed to identify the strengths and weaknesses of the initiated research method. In addition, they have also made it possible to evaluate the effectiveness of their use among the Z generation for the needs of obtaining information and designing a new product. On their basis, it can be stated that active, engaging forms of obtaining information from the Z generation fulfill their functions, however it would be worth having both verbal and non-verbal forms. Thanks to this, each participant will be able to present their views, even those less open to group discussions.

Conclusions

On the basis of conducted research and observations, it can be stated that using non-standardized methods of qualitative research, it is possible to obtain a wide range of verbal and non-verbal information from Generation Z. The author notices the need to make this type of modification in the methods of research of the young generation.

Active forms of research in this group allow for a deeper understanding of their needs and expectations. By considering their way of expressing themselves, communication needs and willingness to co-create, businesses can get much more than just information. As we can see, companies are increasingly taking action, adopting forms of communication with young participants of the world of social media, through their direct involvement. Therefore, according to the author, the research area should also consider such a possibility.

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COMPARISON OF RISK IDENTIFICATION AND ASSESSMENT METHODS IN PROJECTS

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ABSTRACT

Project realization is always connected with a relatively high risk. Project managers try to identify and assess possibly all types of risks to which a particular project is exposed. For this purpose, different methods of identification and risk assessment in projects are used. The selection of the appropriate method or methods guarantees the introduction of an appropriate strategy that will allow reducing the negative effects of risk or even preventing certain events that would have a negative impact on the project. This article show the analysis of the literature on the subject to compare different methods of the risk identification and assessment in projects. It also try to answer the question is there one universal method and if not, what should it include.

Introduction

Risk identification and assessment have an important role in many areas of business activity of enterprises, especially during project realization. In the literature there are many definitions of risk. T.T. Kaczmarek defines it as the possibility of failure, and in particular the occurrence of events beyond the control of the acting subject, which he cannot accurately predict and which cannot fully prevent, and which – by reducing the useful results and/or by

increasing expenditures – receive action entirely or partly attribute effectiveness and economic viability (Kaczmarek, 2005, p. 27). From the point of view of the risk in projects, the risk is an uncertain event or circumstance which, if it occurs, may have a positive or negative impact on at least one of the project's objectives, such as scope, time, cost or quality (PMI, 2013, p. 309). Project risk is also defined as the probability of occurrence of a phenomenon or activity that may have positive or negative effects on the course of the whole project and/or its individual parts (European Commission, 2004, p. 145).

Risk management is a process of undertaking risk-related activities by organization and achieving an acceptable level of that risk. Risk management process consists four basic stages (Wysocki, 2013, pp. 125–134):

1. Risk identification – defining the risk to which the project is exposed as well as relations occurring between individual risks.
2. Risk analysis – qualitative and quantitative (determining quantifiable values of the probability value and the effects of unfavorable events both for individual project activities and for the entire undertaking) (Skorupska, Kuchta, Górski, 2012, p. 61).
3. Risk control – planning activities aimed at minimizing the identified risk.
4. Risk monitoring – monitoring and controlling changing risk factors in the project.

In the field of project management, risk management involves identifying specific threats to the project system and determining actions aimed to eliminate these risks or minimize the impact of them on the project.

Literature review

Project risk management should include both qualitative and quantitative analysis to determine the impact of risks on costs, deadlines or technical specifications of the project. Such assessment allows to distinguish the threats recognizable at the beginning of the project and those that cannot be identified. Moreover, it allows to recognize those threats that have an impact on the course of the project and, therefore, must be constantly monitored.

Analysis is extremely difficult, so it is very important to select proper methods for identification and risk assessment. The level of threats in the project is determined by three basic parameters: the probability of their occurrence, the severity of their consequences and their detection. In practice, the assessment results from the joint use of the first two. Unfortunately, sometimes a series of events, seemingly without negative consequences for the project – it becomes a contribution to its failure.

In general, the risk classification methods can be divided into two groups (Monkiewicz, Gąsiorkiewicz, 2010, p. 41). First, qualification methods are descriptive, supported by calculations of the basic project parameters: time, cost and description of their impact on the final shape of the project. Second, enumeration methods are based mainly on statistical methods.

The literature presents various methods of project risk assessment and classification, the first of which is the PERT method. It serves to assess of the progress of project work. This method can be divided into two phases, the first one refers to the calculation of the level of activities, the second refers to the level of the project. The PERT method is a set of mathematical equations called Rangego-Kutta, which by using times: optimistic, probable and pessimistic, allow to calculate the probabilities of side effects (Trocki, Hrucza, Ogonek, 2003, p. 196).

The PERT method focuses on the critical path – the longest way to implement the project. The use of this method makes it possible to identify activities to which special attention should be paid as well as places on

the schedule, where the slowdown takes place. Detection of delays allows to reduce the time allocated for the implementation of the project (Kerzner, 2005, pp. 180–184).

The concentration of the PERT method mainly on time problems is of great importance in obtaining accurate, real time schedules. The disadvantage of the PERT method is that strict control of time often causes not putting attention on other important issues related to the project. In addition, the use of this method, as a result, does not give a list of threats, does not assess the probability of their occurrence, but only indicates tasks that delay could delay the project (Jędrych, Pietras, Szczepańczyk, 2012, pp. 67–68).

Another method is Monte Carlo simulations, that allows to effectively detect financial and time risks for individual activities as well as the entire project. On the basis of data, the risk can be determined by means of the probability of project implementation within specified costs and time. Method involves determining relative risk levels, which is served by different, distributions: monotonous, normal, triangular and beta distributions (Pritchard, 2002, p. 267).

Monte Carlo simulations require the use of a computer, because it uses a random number generator to count the uncertainties of individual components of the hierarchical work structure. Then, for each of the structural elements, a critical path is determined, and for the entire project duration and estimated cost. This process is repeated many times, and the result of each loop is called an experiment. Individual experiments constitute a distribution. This method is most often used to calculate the probability of completing a project successfully, at a given budget and at a specific time (Wittek, 2006, pp. 422–423).

The advantage of next method is speed and form, which does not require giving opinions. Crowford's method is most often used in situations where the project requires more employees to solve the problem, but they do not have to make decisions. This method is based on the collection of risk data, which allows problem formulation (www.4pmp.pl). Then the problem is repeatedly analyzed by the respondents who write down their observations. Repeatability of the process allows, over time, to get an answer to the question about what constitutes the greatest threat and how to react to it. The effectiveness of this method depends on a clearly defined question, which is big disadvantage.

Another methodology of risk identification and assessment is Value at Risk, which allows to calculate the probability of investment loss based on the analysis of three components – time, level of certainty and amount of loss. VaR allows to calculate the maximum expected investment loss in the given time. Value at risk depends on two parameters: time horizon and confidence level (tolerance). Measuring Value at Risk allows to get an answer to the question, what is the maximum potential loss that a company can incur with a given probability within a certain time from an investment of a certain value. This loss can be determined on the basis of statistical analyzes, so the distribution of probabilities of behavior of a given security. The risk is estimated in three steps (Kuziak, 2003, pp. 29–30):

- measurement – using the algorithm calculating loss,
- model – application of mathematical theory and logic,
- verification – interpretation of measurement results.

The method most often used after contact with threats, in order to avoid similar risks in the future is risk modeling. This method is based on creating a list of questions enabling risk assessment for project activities. The questions should relate to the activities of the organization and indicate the scope of risk that the organization is able to bear (Altman, 1998, pp. 1724–1725). The steps of creating the risk model are (Pritchard, 2002, pp. 215–225):

- identification of the most important threats and opportunities,
- assigning weights to the indicated factors,
- determining the scale and methods of the estimated probability,
- developing measures for estimating probabilities,
- determination of the range of numerical results,
- graphical presentation of results,
- model testing.

The advantage of this method is its high accuracy and usability. Risk modeling is a method that allows to make a decision to start or stop a project.

The probability-effect method is a method in which level of the threat depends on its impact on the project. One of the following ways of operation is used here:

1. By reading the global assessment, corresponding to the consequences for the project.
2. By assigning an assessment in an intuitive way to each of the project's risks. The sum of the partial grades will be an assessment of the entire project.
3. By providing an approximate effects for each of the project's objectives. These estimates will determine the overall significance of the effects of threats on each of the project's assumptions, as well as on the global value.

The assessment of the severity of the threat is sometimes based on quantitative estimates coming from analysis or simulation, as well as from empirical estimations derived from experience gained from working on other projects – transferred by a parametric model or by analogies. Although this method of risk assessment is more difficult to implement, it is certainly worth paying attention to both project managers and project team members because the assessments obtained in this way have an undeniable advantage over numerical ratings.

Another method is risk sheets, that allows to look separately at the severity of the threat, the probability of its occurrence and possible damage that it may cause in the project. This method does not fully reflect the scale of the risk to which it is exposed (International Organization for Standardization, Space Systems Risk Management, ISO 17666).

A good solution is to multiply the estimated weight of the project by the probability of its occurrence, thanks to which the degree of risk is obtained. By comparing the severity of all identified threats in one table the project's risk profile is obtained. Taking into account the need of minimize the threats, the risk sheet should be supplemented with proposals to minimize identified risks, along with the estimated cost of their introduction.

Expert evaluations is a method which aim is to identify threats, assess risks or estimate data necessary to apply enumerated risk assessment methods. Successful interviews require meeting several basic rules. The interviewer must understand the area of competence in which the interlocutor turns, should ask open questions, allowing free conversations of the interlocutor and should avoid confronting the interlocutor. The interviews must be clearly defined and should be conducted in an environment that will not distract the interlocutor. Time of the interview should be controlled.(Jędrych, Pietras, Szczepańczyk, 2012, pp. 100–101) This method allows identification of risk based on the opinions of independent experts. However, it does not bring knowledge about the future, but only expectations of a group of specialists.

The aim of the article is to compare different methods used to risk identification and assessment in the project, and try to point the best one. To achieve this goal, the methods were compare from the point of purpose, important feature and versatility.

Method

The research is based on the analysis of literature that is related to the subject of project management. The comparison includes the analysis of several selected methods used for risk identification and assessment in the projects. Comparison of methods allows to answer the question is there one universal method for enterprises to identify and analyze the risk.

Results

The analysis of the risk identification and assessment methods presented above allows dividing them into two groups. First are the concepts used to identify hazards and determine delays, such as PERT, Crawford's method or risk sheets and VaR. The second group includes methods for risk analysis only, such as Monte Carlo simulations, probability-effect method, expert assessments and risk modeling. The collective comparison is presented in Table 1.

Table 1. Comparison of the risk identification and assessment

Method	What is used for?	Important feature	Versatility
PERT	– risk identification and analysis, – determination of delays in the project	Determination of the critical path	Critical path is an element that is in every project. There are always tasks which failure to complete or extend may result in failure of the project
Monte Carlo simulations	risk analysis	The element of probability	Each project is based on the probability of occurrence of specific events that may adversely affect the implementation of the project
Crawford method	– risk identification, – determination of delays in the project – assessment of possible losses and ways to respond to risk	Assessment of the competence of the project team	Employees' competences have an impact on the closure the project with success, so their evaluation is a key element of any project
Value at Risk	assessment of possible losses	Assessment of losses	The assessment of losses has a great importance when deciding whether or not to start a project
Risk modeling	risk analysis	Evaluation of the organization	Assessing the organization in terms of market position, development, technology, allows to identify threats to the project implementation successfully
The probability-effect method	risk analysis	Risk weight rating	Assessment based on quantitative estimates as well as empirical estimates have an advantage over numerical ratings
Risk sheets	– risk analysis – probability of occurrence of risk – assessment of possible losses	Project risk profile	Multiply the estimated weight of the project by the probability of its occurrence, the degree of risk is obtained
Expert evaluations	risk analysis	Experts' opinions	Risk analysis based on the opinions of independent experts

Source: own elaboration.

The discussed methods find their application in various phases of risk management. Depending on the type of project, the advancement of work, available resources, experience in the implementation of work, you can apply a different methodology that will probably contribute to the success of the project. The diversity of methods allows

to choose a method adequate to the needs of a given undertaking. The data presented in Table 1, however, do not allow to point out one universal method. The question then arises whether it is possible to create one method that can be used in every phase and in every project?

Due to the importance of the impact of risk on the implementation of projects, it is worth trying to create a universal method of risk management. The universal method should combine key features of the discussed methods of risk identification and assessment in projects. This is due to the fact that so far no universal method has been developed, but each of them finds its application in relation to different types and aspects of projects.

The universal method should be based on elements that distinguish the methods used so far. Such a method should determine the critical path, risk profile, probability elements, as well as include the assessment of both the organization itself, employee competences, losses, as well as the severity of threats. The combination of these elements in one method, extended with the opinion of experts in line with the specification of the organization's activities, can be a universal method for identifying and assessing risk in projects.

Limitations

Due to the limited volume of the article, it covers only a few selected methods discussed in the literature.

Conclusions

Many methods of identifying and assessing risk are described in the literature, so it is a great difficulty for people implementing the project to choose the right one. Usually the known and popular methods are used, not those that would actually meet the needs of a particular project.

Therefore, it is extremely useful to compare methods in terms of their suitability and emphasize differences. It helps people managing the project to obtain information about the method that is most useful for a project implemented by them.

The article presents the results of the comparison of the methods of risk identification and assessment. Interesting from the point of view of theoretical and practical considerations, it may be creating a universal method that would combine the features of the analyzed methods.

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THE SCOPE OF PROJECT MANAGEMENT IN SERVICE COMPANIES

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ABSTRACT

Project management is an extremely valuable tool supporting the implementation of particularly innovative ideas. Nevertheless, there are relatively few data on the sectoral conditions for the application of project management. While there are sectoral conditions for the implementation of innovations, there may be a sectoral determinant of the application of project management. Article raises the question of scope of project management in service companies, is it different than for example in technologically-oriented enterprises and focused on material production. The goal is to describe way of application of project management in service companies. To verify the above issues the desk research analysis and focus groups analysis has been used.

Introduction

Project Management is very important as a set of tools for companies' mangers as well as one of the most important skills that are required in today's world. Project management plays a very important role in many industries. It is required in a larger company as they have got many on-going projects taking place at different times and with different ranges. Major industries where project management plays a vital role are IT, FMCG, as well as defense,

construction, energy, pharmacy. This means that project management plays a huge role in entities that are oriented towards material production. Nevertheless, it is also used in service entities, such as offices of state administration or hotels. Thus, the specificity of project management may be different.

Area of project management

Disciplined project management starts at the portfolio level, where the strategic vision drives initial investments and where value measures are established. A fully aligned project, program and portfolio management strategy encompasses the entire organization, dictating project execution at every level and aiming to deliver value at each step along the way. Project management is, in fact, shorthand for project, program and portfolio management. And more companies are clearly seeing the payoff from investing time, money and resources to build organizational project management expertise: lower costs, greater efficiencies, improved customer and stakeholder satisfaction, and greater competitive advantage (White paper, PMI, 2010, pp. 8–10).

Project management is a set of activities performed to achieve the main and intermediate goals set in a specific, finite time. It includes initiating, planning (scheduling, budgeting), implementation and control of tasks needed to achieve project objectives. Project management deals with effective achievement of project goals while neutralizing the impact of existing limitations and risks, as well as being a field of building motivation of the project team and proper communication between project participants. Project is a temporary endeavor undertaken to create a unique product, service or result. On the basis of these assumptions, the project management triangle presented below can be quoted. It assumes that each of the aspects: time, range, budget must go to a specific goal and what is important they have to be balanced.

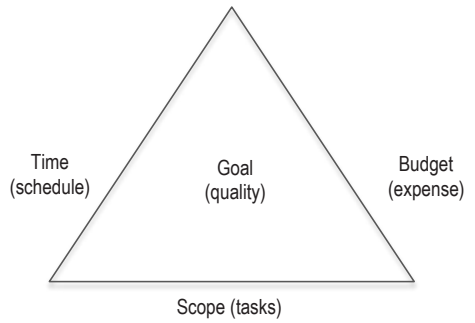


Figure 1. Project management triangle

Source: Mingus (2009), p. 11.

Project management is practical knowledge about eliminating the risk of failure at the level of the entire project life cycle. The risk in the project is mainly due to the impossibility of eliminating the uncertainty associated with future events at each stage of the project resulting from the dynamics of communication between participants, variable performance of project teams, erroneous planning and external environment factors.

Project cycle management (PCM) is general process of planning and managing projects, programs and organizations. PCM is based around a project cycle, which ensures that all aspects of projects are considered.

A central value of the PCM method is that aspects of the project are reconsidered throughout the project cycle to ensure that any changes, which have occurred, are included in the project design. The assumption of PCM cycle of operations is shown in the figure below.

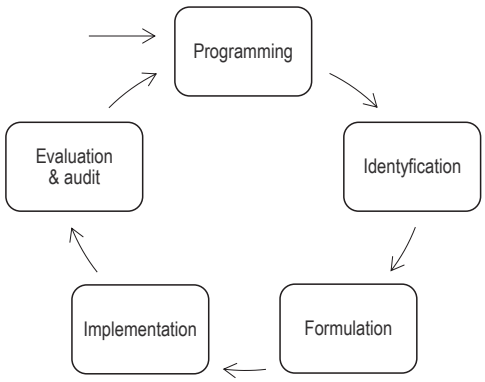


Figure 2. The cycle in PCM method

Source: European Commission (2004), p. 8.

Decision making criteria and procedures are defined at each phase (including key information requirements and quality assessment criteria). The phases in the cycle are progressive – each phase should be completed for the next to be tackled with success.

It can be noticed that both the assumptions of the project management triangle and the life cycle of the project are universal and therefore it is possible to implement them both in entities oriented towards material and non-material production.

Project management can be defined as learning about defining and achieving goals while maximally optimizing the use of resources (e.g. time, money, people, etc.). Thus, it can be noticed that the aspects are just as significant in the entities of the material and non-material production sectors.

Project management in service companies

Most organizations use three metrics to assess project success: time, budget and requirements. There are several problems with this narrow view:

- it often has limited bearing on real value to the client and the organization,
- simply meeting requirements does not guarantee optimal performance,
- doing the wrong thing on time and on budget serves nobody, even if it does meet "requirements,
- it views client satisfaction and total opportunity value as lagging indicators to be measured afterwards when they are, in fact, leading indicators if the project is to be perceived as a success and be a success,
- it directs the project manager's focus inward toward the project's requirements, schedule, and budget and away from the client (Manas, 2017, p. 9).

Jerry Manas has developed a "lean" project management framework that shifts the focus of projects toward client satisfaction and real business value. He calls it service-oriented project management (SOPM). Service-oriented project management consists of a four-phased approach: understand, prepare, iterate, and transform. SOMP methodology starts with symptoms. ideas, and research, validates goals and alignment, focuses on client satisfaction and value, aims to exceed expectations (Manas, 2008, p. 3).

Service orientation pay more attention to the service aspect in project management in opposition to business-oriented project management. This means a greater role of the interpersonal aspects and the leadership skills of project managers.

Another aspect of the analysis of service issues in enterprises is the analysis of the situation regarding project management in typically service entities such as, for example, state administration offices. Projects are realized in not only business, but in the governmental sphere as well as in the non-profit organizations.

In governmental sector aspects like: existence of specific legal norms, organizational structures, usage of public resources, domination of internal clients, existence of a wide range of stakeholders from different social groups are very important and characteristic. Tendencies of adopting business techniques by the service-oriented organizations or government are common. They adopt not only tools and techniques, but also outsource of different functions and project management plays a great role in those sectors.

The group of managers who took part in the FGI study within the scope of the subject analyzed the application of project management rules in the entities they represent. The object of the study was management techniques used in companies and ways of implementation. The survey took place in the third quarter of 2017. Project managers asked in the focus group study about the difference in project management in the product-oriented and service-oriented enterprises stated that the generics of the methodology and the tool used are the same. Nevertheless, it is necessary to apply the procedures and the tools (including documentation, templates) to the service specification. In the case of service enterprises, cross-sectoral skills as well as interpersonal skills of project manager were emphasized. The respondents confirmed that, for example, the Agile method can be used both in entities oriented towards material and non-material production. Nevertheless, for example scrum master should be aware of the specificity of service entities, including the specificity of implementation for example innovations in service entities.

Role of project management office (PMO) was also mentioned by project managers during FGI. Due to specificity of service organization and large number projects, also usually shorter, less expensive projects then for example material production and investment projects, the rank of the PMO unit, which can and should coordinate all project according to the FGI experts increases. PMO is a department within a business that defines and maintains standards for project management within the organization. The PMO strives to standardize and introduce economies of repetition in the execution of projects. The PMO is also source of documentation, guidance and metrics on the practice of project management. The Project Management Office phenomenon is a dynamic and regularly evolving feature of the project landscape. The functions and practices expected of the PMO differ as widely as the industries and organisations, which host them (Darling, Whitty, 2008, p. 7). The PMO can become an asset, a commodity to be traded upon and a badge to be worn to attain certain privileges.

It can be noticed that in order to effectively manage projects in service companies, it is important for the project manager and team members to have appropriate knowledge, skills, expensiveness of methodology, training courses, as well as understanding of the approach of a company. Development companies own specialists, who would be able to manage service-oriented projects is also very important.

Conclusions

The temporary nature of projects stands in contrast with business as usual (or operations), which are repetitive, permanent, or semi-permanent functional activities to produce products or services. In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies (Bhargav, 2017, pp. 5–6). Nnevertheless, the concept of project management as well as the tools characteristic of project management have a high degree of universality. The same can be transformed and adapted to both the management of material and non-material production. Project manger's knowledge and experience will be significant in this aspect.

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BUSINESS INTELLIGENCE SYSTEMS IN SMES

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ABSTRACT The aim of the article is a presentation of the business intelligence systems for the sector of small and medium enterprises. The first part of the article contains an overview of the basic concepts related to Business Intelligence systems that allow a better understanding of the basic properties of BI techniques and allow their use in the SMEs. The second part of the paper contains a description of the stages of the Business Intelligence system implementation in the small and medium enterprises, using free applications available on the market. The proposed concept provides a starting point for further, in-depth reviews of building a competitive advantage in the market with Business Intelligence systems in SMEs.

Introduction

The functioning of Polish companies in the economic markets is increasingly dependent on efficient analyzing large amounts of business data and responding to changes in a dynamic environment. Companies introduce new products and services, work with a specific group of contractors and clients, as well as take advantage of new distribution channels. As a result of these activities is a growing stream of information, which must be converted to

valuable business data. It can therefore be noted that the financial results and position in the market is dependent on the knowledge about the actual business processes and developing key economic indicators responsible for building competitive advantage and achieving business goals.

In this context, it seems that there is a great need to support decision-making processes with modern IT tools that effectively enable collecting large amounts of data, processing them into the desired structure and analyzing and reporting data in order to increase the level of effective functioning of the company. This assumption applies to large enterprises with multidimensional activities, as well as to the sector of small and medium enterprises, which carry out less complex economic processes. In other words, one must indicate such solutions, that enable the use of large amount of data, stored in company databases. In the case of the SME enterprises, which typically do not have special financial and human resources, the task of searching for relevant business associations most often remains the responsibility of the management board of the company.

Characteristics of Business Intelligence system

For several years, software for small and medium-sized enterprises is advancing the development of IT tools, known as Business Intelligence (BI). It is concluded that this concept was introduced in 1989, and defined as "a set of concepts and methodologies designed to improve business decision-making by using fact-based systems" (Hashmi, 2006, p. 6). Another definition, underlying the IT aspect, indicates that this term means "a wide range of software for the collection, consolidation, analysis and sharing of information, which enables better decision making in the organization" (Adelman, 2000, pp. 7–11). One can therefore conclude that the BI systems used by business analysts (large enterprises) or directly by the decision makers with analytical knowledge (large enterprises and SMEs), allow the rational and effective collecting and analyzing data, significant for the main business goals of the company. The literature of the subject most often indicates the following areas of the business that can and should be supported by BI systems (Negash, 2003, pp. 78–84):

a) profitability – related to the basic objective of business conducting;
b) decision making – related to the identification and assessment of potential opportunities and threats, delivering relevant information to allow evaluation of the performed activities;
c) questioning – putting the queries that rely on the use of the built-in BI language, so one can quickly get answers to specific business enquiries.

An important concept for understanding Business Intelligence, is the maturation of the system [more about models of maturation: (Olszak, 2012, pp. 11–23). This term refers to a perfect (complete) state, to which one should strive, in the context of the use of business data. Achieving the desired state typically is associated with a specific transformation of the company, which means making various changing in the enterprise. In other words, maturity models are designed to select the direction of the development of BI systems in the enterprise, or to get answers to the following questions:

1. What is the place of BI systems in corporate strategy?
2. What are the business processes in the context of the flow of information?
3. Where are the important transportation hubs and large data sets?
4. Where are the basic economic measures (such as: cost, revenue, inventory, etc.), determining key economic indicators?
5. Who is responsible for generating the key economic indicators and decision making?

Despite the dynamic development of Business Intelligence tools, Polish enterprises (especially SMEs) do not adequately take advantage of the proposed method and data analysis techniques. Until recently, the main reason for this was the financial barrier that allows the implementation of BI systems only to large enterprises. With the advent of cheap, commercial and even free BI tools, dedicated for SME sector, the second barrier appeared, which is associated with a lack of sufficient expertise knowledge, that allows for the rational and efficient use of business intelligence systems by policy-makers. So how should look a road map for Polish companies, and the first steps in the area of Business Intelligence? The answer to this question can be found in the dual-purpose activities. First, in choosing/buying such BI tools, which will be characterised by:

a) flexible report creation without the expertise and technical knowledge;
b) the ability of fast connecting to any data source (spreadsheets, network and desktop databases, text files, Web pages, social networking sites, etc.);
a) building up analyses on demand in real time;
b) an intuitive and simple interface to the data visualization;
c) security in sharing the reports and data protection.

The second component is to gain by decision makers the key competences (knowledge) related to the data analysing. The most important areas should include knowledge about:

– ability to get data, from a variety of sources,
– the relational data model (structure and how to store information),
– basic analytical techniques in the context of building a key economic indicators,
– dynamic reporting with built-in visualization techniques (charts, maps, tables, KPIs etc.).

Business Intelligence tools for SMEs

The most popular analytical program used in enterprises is the spreadsheet, which advanced tools, in particular, pivot table, allow to aggregate data and create basic reports on operational and tactical dimension of the functioning of the company. This is not a database tool, the companies use other systems (financial, accounting, human resources, resources management, inventory, etc.) to collect business information. From the point of view, it is important that the data collected through these systems can be saved (exported) in database format, or in spreadsheet format, which will allow decision makers to prepare advanced business intelligence analysis. At this point one should therefore indicate the main steps and tools for the use of BI techniques in small and medium-sized enterprises:

1. Identification of the sources and the nature of information in the enterprise – database identification and how data is stored in information systems.
2. Preparing data in tabular form – export (save) data and adjust their structure (table headers, data types, delete unnecessary records, etc.). At this stage, analysts/policy makers can use the free add-in program for Microsoft Excel spreadsheet, which is Power Query, allowing the appropriate data preparation. The second option might be using the Microsoft Power BI (free business intelligence tool) and the built-in Query Editor (Query).
3. Preparing data model – a combination of tables and relations that contain specific data (normalization of the project). At this stage the analyst must have a basic knowledge of relational data model that enables

appropriate data structure. The data model can be built by using the free add-in for Microsoft Excel spreadsheet which is Power Pivot or directly in Power BI.

4. Business Analytics – aggregating data, calculations of specific values, the creation of new measures and hierarchies, adding and/or connecting specific fields/tables (for example, a table that contains a date (year, quarter, month, day), allowing for a detailed analysis Business Analytics can be done in the Power Pivot or directly in Power BI. At this stage the analyst requires knowledge of basic techniques and analytical formulas (aggregating functions, columns, and calculated fields, key indicators, DAX, etc.).
5. Visualization and the preparation of reports – graphical presentation of data (dashboards) using charts, diagrams, maps, tables, text values, etc. (two free add-ons to a Microsoft Excel spreadsheet: Power View and Power Map or visualizations in Power BI).
6. The report sharing and the data safety – availability and editability of the prepared reports.
7. Scenario of the presentation and interpretation of the reports (storytelling) – using the interactive features within developed reports, enabling multi-level presentations (individual categories, using Power Bi Quick Insight, automatically detecting existing associations between the data, which are not always visible to the analyst).
8. Advanced analysis in Power BI – using expert tools to create enhanced solutions: Advanced SQL functions, a DAX formulas, prediction analysis using Azure services and R language, display and update results reports in real time, etc.

Business intelligence development steps in the sector of small and medium-sized enterprises constitute a starting point for building a sound business strategy based on economic data collected in the company. Business intelligence reports can be used to increase the level of efficiency in many areas of business. The most important of them include:

- analysis (analysis of costs and revenues),
- production planning (the efficiency of processes and resources),
- quality management,
- analysis of the efficiency of the employees,
- optimization of inventory,
- analysis of the supply chain.

Conclusions

Efficient management and making the right business decisions requires knowledge on the processes coordination and resource configuration in the enterprise. In order to increase the level of efficiency of company functioning, it is necessary to use Business Intelligence solutions that are available on the market. Regardless of whether the size of the enterprise, a manager working in a dynamic environment, should use the BI techniques that are a big help in resolving issues related to one of the biggest challenges of modern management – the unlimited amount of information. The proposes use of business intelligence tools can be an important part of building a competitive advantage in the market and a starting point for searching for new, more effective and better quality business models for small and medium-sized businesses.

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EUROPEAN UNION FUNDS IN THE DEVELOPMENT OF EUROPEAN GROUPINGS OF TERRITORIAL COOPERATION (EGTCS) IN EUROPE

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ABSTRACT

The aim of this paper is to analyse the financial determinants of the development of European Groupings of Territorial Cooperation (EGTCs) operating in Europe. This work focuses on European funds, with particular consideration of the European Territorial Cooperation (ETC) funds. Literature research on the evolution of cohesion policy has been conducted. A new instrument has been described, i.e. the EGTC, based on analysis of legal documents. This paper also seeks to assess the effectiveness of this instrument. For this purpose, the size and structure of 65 EGTC budgets for two programming periods (2007–2013 and 2014–2020) have been analysed. The size of the budgets was compared with the scope of EGTC operations. Numerous barriers related to the acquisition and management of EU funds have been identified. It has been found that the groupings which operate in Central and Eastern Europe, in particular those located on the Hungarian border, were in the most difficult situation. Despite the financial support from the Hungarian government, in most cases these groupings did not manage to complete the projects financed by ETC funds 65 EGTCs obtained slightly more than 0.1% of ETC funds. The budget of a statistical EGTC was EUR 1 million; however, most of these groupings had a budget which was smaller than EUR 100,000. The implementation of statutory tasks was challenging with such small budgets. With few exceptions, this instrument turned out to be moderately effective. As regards the role which this instrument is to play in cohesion policy, it should be further improved.

Introduction

The European Union, and earlier the European Economic Community, has attached utmost importance to the support of the processes of cross-border territorial cooperation from the very beginning (Svenson, 2015, p. 279). This resulted from a belief that such cooperation, by removing border barriers, contributes to the democratization of Europe, brings people closer together, creates planes for getting to know one another, helps solve the economic

and social issues which go beyond the state level (Kulesza, 2003, p. 15; Wolska, 2011, p. 166). The concept of territorial cooperation developed in Western Europe in the 1960s. It was reflected in the activation of decentralising processes which, as a result, increased the autonomy of cross-border regions (Lechwar, 2008, p. 23).

The development of international bottom-up initiatives and the activation of cross-border cooperation changed the priorities of EU policy (Studzieniecki, 2015, p. 9). New institutions needed to be established to improve the existing Euroregions. Euroregions had no legal personality and could use EU funds in a limited manner. The establishment of the EGTC instrument in 2006 opened a new stage of cross-border cooperation. The adoption, in 2006, of the Regulation ((EC) No. 1083/2006) establishing a European Grouping of Territorial Cooperation, was both a major change in the legal framework for territorial cooperation, and an evolution thereof. It was a major change because it was the first Community instrument with regulatory scope in the field. It was also a change because it brought this cooperation between authorities located in different European states, which had hitherto by its nature been a fringe phenomenon, to the heart of the integration process. Representatives of many scientific disciplines, including lawyers (Dolnicki, 2012, p. 154; Kusiak-Winter, 2011, p. 172; Drab, Kledzik, 2009, p. 555), political scientists (Grose, 2011, p. 3; Lewkowicz, 2013, p. 45), economists (Mędza, 2015, p. 62; Studzieniecki, 2016, p. 75) as well as geographers (Bohm, Drapella, 2015, p. 472) were interested in the determinants of EGTC development. Economically, the EGTC instrument has become a significant part of regional policy and regional development (Pancer-Cybulska, 2015, p. 383; Bucholski, 2009, p. 337). According to the author, a demand for theoretical and practical assessment of its effectiveness has increased. Although the literature on the subject is becoming increasingly richer, it still lacks analyses about the financial determinants of EGTCs. Since EU funds play the key role in developing and supporting EGTCs, this issue has been analysed in this paper.

The ETC as a new objective of cohesion policy

Until 2006, territorial cooperation lacked sufficient political grounds and legitimacy despite being the EU's focal point (Studzieniecki, 2015, p. 9). The European Territorial Cooperation became one of the three objectives of cohesion policy for the years 2007–2013. It continued the Interreg Community Initiative and covered a larger area than the former Interreg. It was extended by cooperation on maritime economy. During the 2007–2013 financial period, the European Union allocated a sum of EUR 7,750,081,461 to the ETC, which accounted for 2.52% of all resources of the European Regional Development Fund (Council Regulation (EC) No. 1083/2006). During the subsequent 2014–2020 programming period (INTERREG V), the importance of the ETC considerably increased. The ETC became one of the two objectives of EU cohesion policy, not one of the three objectives.

A sum of EUR 8,948,259,330 was allocated to this cooperation, which accounted for 2.75% of all ERDF resources (Regulation (EU) No. 1299/2013). Cross-border cooperation became the priority of territorial cooperation. During the years 2007–2013 and 2014–2020, 73.86% and 74.06% of ETC resources were allocated to this cooperation respectively (Figure 1).

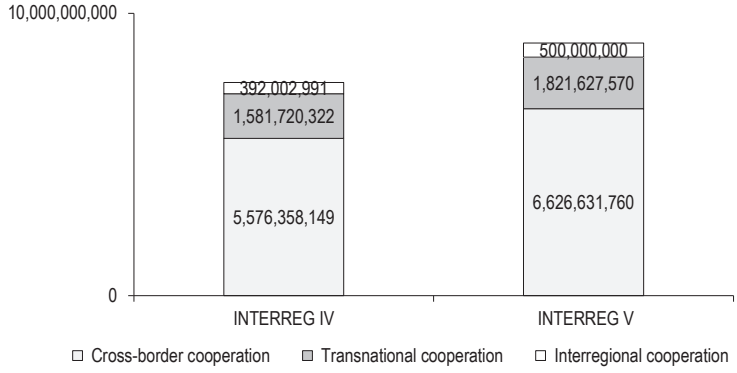


Figure 1. EU funds allocated to the European Territorial Cooperation under INTERREG IV and INTERREG V

Source: own work based on Council Regulation (EC) No. 1083/2006.

In case of cross-border cooperation programmes, the EU regions at NUTS 3 level along all internal and external land borders have been supported. A list of transnational areas was made in relation to transnational cooperation. It covered selected regions at NUTS 2 level. The interregional cooperation covered the entire area of the European Union.

The EGTC as a new legal and economic instrument

The European Grouping of Territorial Cooperation is an instrument for territorial cooperation aimed to strengthen social and economic cohesion by facilitating cross-border, transnational and interregional cooperation. This instrument is innovative as it gives groupings a legal personality. Originally, the provisions (Council Regulation (EC) No. 1083/2006) stipulated establishment of groupings by the following entities: Member States, regional authorities, local authorities, public law bodies. The amendment to the provisions (Regulation (EU) No. 1299/2013) allowed non-EU entities to join EGTCs. Community law regulated the establishment of groupings by regulation. Theoretically, it was a legislative act which had direct effect in all Member States and which did not leave the Member States any discretion as to the choosing of a method for implementing the objectives of Community law (Grosse, 2011, p. 3). Nonetheless, due to the specific character of the EGTC, it was considered necessary to adopt provisions at state level in order to complement the Community regulation. In many countries, the establishment of the EGTC depended on the approval of central authorities. The first EGTC was established in 2008. By 2016, (The Committee of the Regions, 2017) 65 EGTCs operated in 19 EU states (Figure 2).

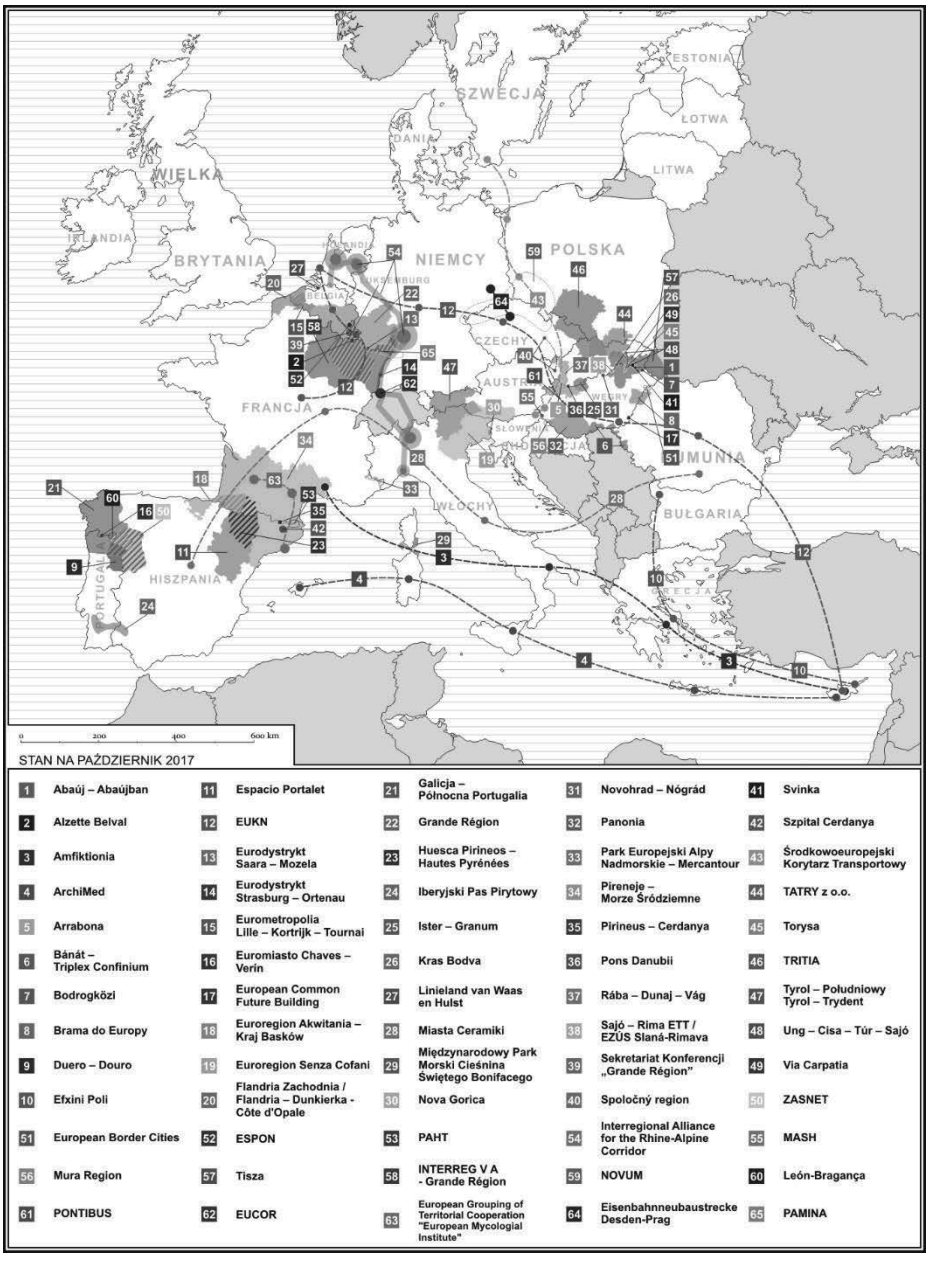


Figure 2. Location of EGTCs in Europe

Source: own work.

Development and operation of EGTCs in Europe

The framework of EGTC operations, including funding rules, is determined, on the one hand, by EU regulations, on the other hand, by regulations of the Member State in which an EGTC operates. EGTCs draw up two main documents, i.e. the Convention and the Statutes, under these provisions. EU provisions stipulate four tasks for the EGTC (Figure 3).

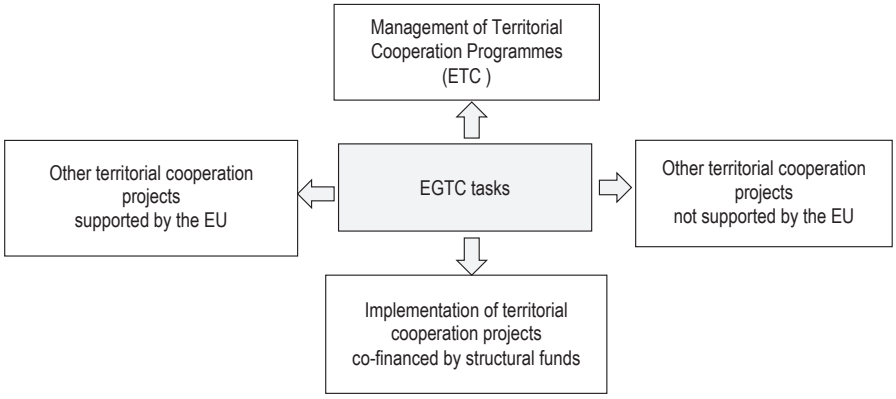


Figure 3. EGTC tasks

Source: own work.

EGTCs implement tasks to various degrees. Not even one EGTC managed to implement four tasks simultaneously (Table 1).

Table 1. Implementation of tasks by EGTCs

Management of a territorial cooperation programme	During the 2007–2013 programming period, the only grouping which performed the function of the Managing Authority was the Grande Region; it managed INTERREG IV A "Grande Region". During the subsequent period, the function of the Managing Authority was performed by two groupings: INTERREG Grande Région (successor of the Grande Region) and ESPON, which has a specific role, since it was the sole beneficiary of the ESPON programme 2014–2020
Implementation of territorial cooperation projects co-financed by structural funds	During both programming periods most of these groupings did not implement projects financed by ETC funds. During the first period, projects were implemented by 18 out of the 50 EGTCs. Only 44 projects were completed. In 2016, when funds from INTERREG V appeared, 17 EGTCs implemented 35 projects. EGTCs were both a leading partner and a "regular" partner
Other territorial cooperation projects supported by the EU	The groupings implemented projects using support from four out of the four European Structural and Development Funds. There is no information on the use of the European Maritime and Fisheries Fund
Other territorial cooperation projects not supported by the EU	The projects were supported by national and international funds (including the Vysehrad Fund the Norwegian Financial Mechanism)

Source: own work.

Financing the activity of EGTCs

The implementation of task by EGTCs depends on the size of their budgets (Figure 4).

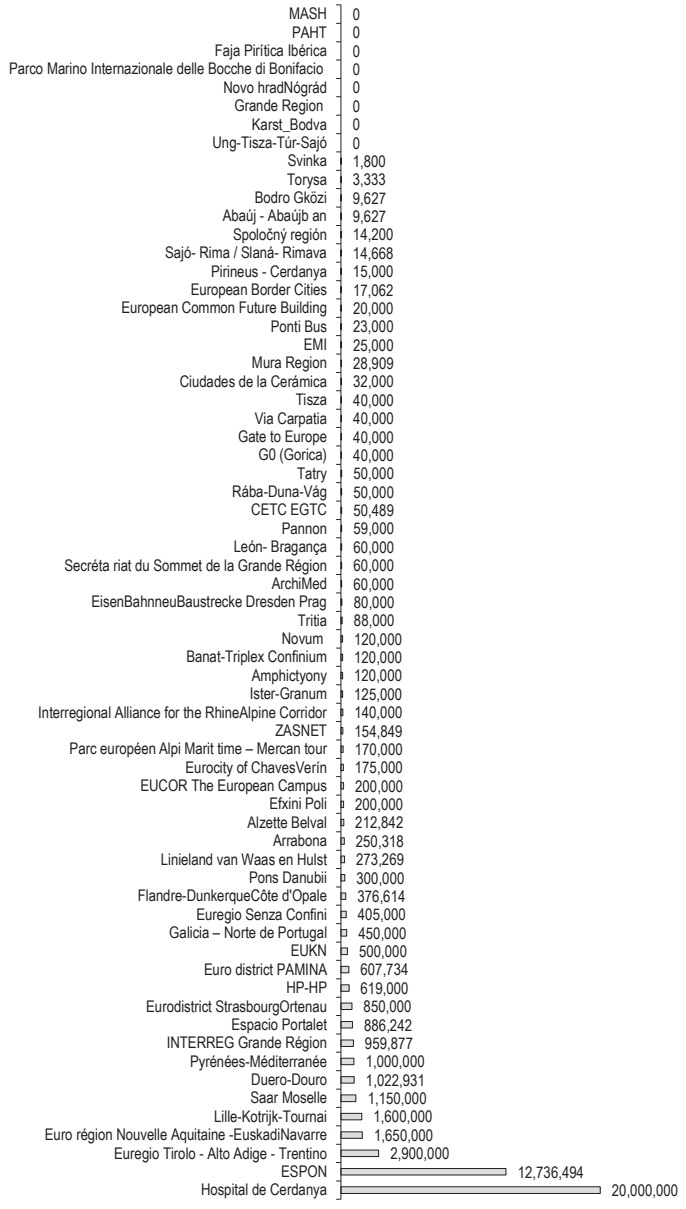


Figure 4. Budgets of EGTCs

Source: own work based on EGTC monitoring report, 2016.

The budgets varied widely. Some EGTCs do not have a budget because they did not take up any activity after registration. The list of the budgets is for reference only. A precise financial analysis of EGTCs is extremely difficult based on the information available. Information on finances, staff and so on is not widely available both in EGTC web pages and in the materials of Council of Europe. The information on dedicated websites of EGTCs |is varying in quality and hardly comparable. In terms of finances no clear distinction is made between membership fees, startup and general budget support, and project funding (Jaansoo, Groenendijk, 2014, p. 5). But a typology of EGTC budgets can be made (Table 2).

Table 2. EGTC Budget Types

No.	Budget type	Budget (EUR)	Number of EGTCs	Description of the group
1.	No Budget	0	8	This group contains groupings which ceased their activity or did not take it up at all. The Grande Region is a special case – this grouping completed its task, i.e. management of INTERREG IV A
2.	Very small	Up to 10,000	4	All these groupings are located on the Hungarian and Slovak border. On the Hungarian side, they are located in Észak-Magyarország, one of the poorest NUTS 2 regions in the EU, where GDP per capita in PPS is only 45%. The groupings were established by local authorities; they comprise of several or a dozen small communes. In terms of population (over ten thousand people) and area (about 200 square kilometres) they are the smallest European groupings
3.	Small	More than 10,000 up to 100,000	21	This group contains groupings established by regional, district and local authorities. Most of these groupings (67%) are based in countries which joined the EU in 2004. These groupings are located in cross-border areas, except for an association which brings together islands (Archimed) and an association of cities of ceramics (Ciudades de Ceramika). The Secretariat of the Grande Region has a special status. This institution implements tasks involving management of cooperation in the region located in the Benelux and Germany
4.	Medium	More than 100,000 up to 1 m	25	Most of these groupings (80%) are located in the "old" EU. The members-founders are dominated by entities at regional level (60%). There are also other entities such as universities (EUCOR), nature parks (Parc européen Alpi Marittime – Mercantour), transport institutions (EisenBahnneu-Baustrecke Dresden Prag). The groupings which include these entities were established to implement one specific task (education, ecology, transport development). Groupings with a special status include INTERREG Grande Région, which manages one of the cross-border programmes
5.	Large	More than 1 m. up to 10 m	5	This group comprises of Euroregions which have many years of experience in cooperation and are located in the "Old EU". For these Euroregions, the establishment of EGTCs was a continuation and institutionalisation of the existing cross-border cooperation
6.	Very large	More than 10 m	2	These groupings are very unusual. Hospital de Cerdanya is the first European cross-border hospital located on the French and Spanish border. On the other hand, ESPON manages the "ESPON 2020" programme. The programme aims at promoting and fostering a European territorial dimension in development and cooperation

Source: own work.

EGTCs obtained resources from EU funds, member fees, state budgets and other sources (Figure 5). As regards state funding, mostly EGTCs operating in Hungary were supported by the state.

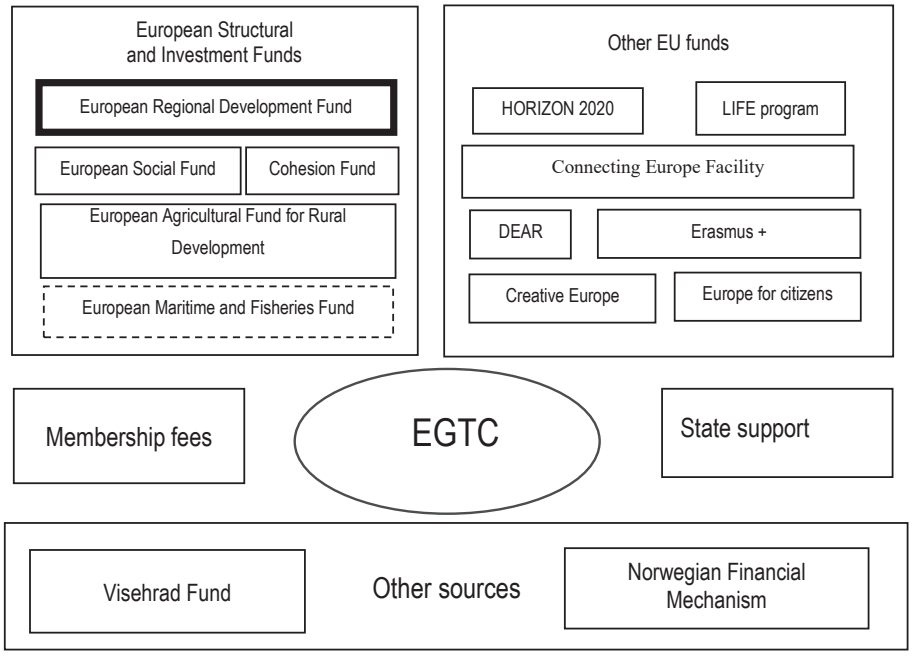


Figure 5. EGTC financing sources

Source: own work.

Eighteen out of the 50 operating EGTCs used funds available under INTERREG IV. They completed 44 projects; their budget was about EUR 60 m. However, it must be pointed out that in the context of EGTC activity, 17% of the INTERREG V A programmes and 20% of the INTERREG V B programmes were used (Table 3). URBACT and INTERACT have not been used. The aim of the URBACT programme is to share knowledge and good practices between cities and different levels of public administration (URBACT 2017). Therefore the programme does not mention the EGTC as a potential beneficiary. The activity of INTERACT involves providing expert support to national administrations and programming institutions engaged in the implementation of ETC programmes. This means that the programme supports institutions which use or intend to use the EGTC as an instrument in a substantive manner, not only financially.

Table 3. Use of ETC funds by EGTCs

No.	Programme	Number of programmes	Number of programmes used	Number of EGTCs using programmes
1.	INTERREG VA	60	10	16
2.	INTERREG VB	15	3	3
3.	INTERREG Europe	1	1	2
4.	ESPON	1	1	1
5.	URBACT	1	0	0
6.	INERACT	1	0	0

Source: own work.

Conclusions

The EGTC is an instrument which was to revolutionize territorial cooperation. However, there are many barriers which limit the full use of this instrument. Serious difficulties occur both during the registration and management of EGTCs. EU regulations intended to establish financially autonomous transnational entities, but regulations of the Member States significantly limited this autonomy. The Member States did not choose to assign their rights to manage EU funds. The groupings were not allowed to become management institutions. The Grande Region is the only exception that proves this rule.

During the 2007–2013 period the European Union allocated nearly EUR 8 bn to the ETC. But EGTCs received only 0.1% of this sum. During the 2014–2020 financial period only 10 out of the 60 cross-border programmes and three out of the 15 transnational programmes are used. However, EGTCs operate in 19 EU states and they could obtain funds from other programmes. The financial condition of the groupings varies very considerably, as shown by the size of their budgets. Only seven groupings have a large budget (more than EUR 1 m). The group includes Euroregions which have many years of experience in cooperation and two unusual EGTCs: a hospital and the ESPON programme. The small groupings located in poor Hungarian border regions are in the worst financial situation. In many cases they operate only thanks to the support of the Hungarian government. It may be assumed that they were established to obtain cross-border funds. But the groupings do not have a privileged position when applying for EU funds. They have to compete with the largest beneficiaries, namely local and regional governments. The budget of all EGTCs (about EUR 60 m.) may be compared to a budget of a county seat such as Sopot. The groupings lack funds which are necessary to complete the ambitious tasks set out in the founding acts. Therefore the projects (which need their own capital) implemented by EGTCs have a small budget. Nota bene, most EGTCs have not participated in any ETC project yet.

If an EGTC does not perform the function of a leading partner, the grouping becomes a secondary provider of territorial cooperation. This situation discourages local and regional authorities from establishing groupings. It is too early to discuss the economic success of the EGTC. But the considerable political and social benefits resulting from the activity of EGTCs must be appreciated. Since EGTCs are important for cohesion policy, it is advisable to conduct further research both at microeconomic and macroeconomic level. Such research should help improve the EGTC instrument.

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CROSS-BORDER COLLABORATION FOR INNOVATION IN TOURISM: THE CASE OF OCEANOGRAPHIC MUSEUMS

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ABSTRACT

One of the key cross-border collaboration areas covered by the support of the European Union is tourism. As a policy area of the EU Strategy for the Baltic Sea Region, tourism is of strategic importance in the region. While EU reports present mostly aggregated information on the outcomes and achievements within respective programmes, this paper takes a case study approach and concentrates on a single project, aimed at introducing an augmented form of touring based on interactive multimedia guides in three oceanographic museums located in the South Baltic area. The research goal is to reveal the obstacles encountered during the project implementation, the solutions applied to ensure efficient cooperation, the project's influence on the mutual perception of the participating organizations and its benefits as seen from the perspective of the personnel involved in the project's realization as well as their general attitude to the project after its completion.

Introduction

The EU Strategy for the Baltic Sea Region considers tourism as an important growth factor and a focus industry of the region (EUSBSR, 2017). The European Union uses a number of programmes to facilitate the goals of its tourism policy (see Estol, Font, 2016, for its comprehensive description). While the respective programme reports may show the achieved results in aggregated quantitative terms of e.g. newly developed facilities or increase

of visitor numbers, it is interesting, what the individual project participants see as benefits for their organisations. As not all of the supported projects end successfully (see de Jong, 2014, p. 230, for an extreme case of failure), it is also worth investigating what project team members recognise as main issues.

In this paper, we address these research questions by performing a case study on the *BalticMuseums 2.0 Plus* project that implemented innovative solutions in tourism. This collaboration example was chosen, because it has been considered particularly *successful* from the point of view of both the authorities and the tourists. The project was presented as exemplary in an official guide (EC, 2015, p. 10), and its products were positively assessed by their end-users (not a single one of the 993 interviewed tourists evaluated them negatively – see Zdziebko, Drążek, Swacha, Muszyńska, 2017). The research results described in this paper reveal whether the partnership can also be considered successful from the point of view of the project participants.

Research method and surveyed participants

The chosen research method is a case study following a single-case holistic design. Such an approach has been successfully applied in the study of cross-border collaboration projects in the past (see e.g. Leibenath, 2007). The opinions of the individual project members were obtained with a computer-assisted self-interview. The survey contained 25 questions arranged in three sections: common, for museum employees only, and for museum managers only. The data describing age, sex, nationality and employing institution of the surveyed participants are presented in Figure 1. Sixteen project team members, including all three managers of the museum project partners, took part in the survey conducted 4 months after completion of the project.

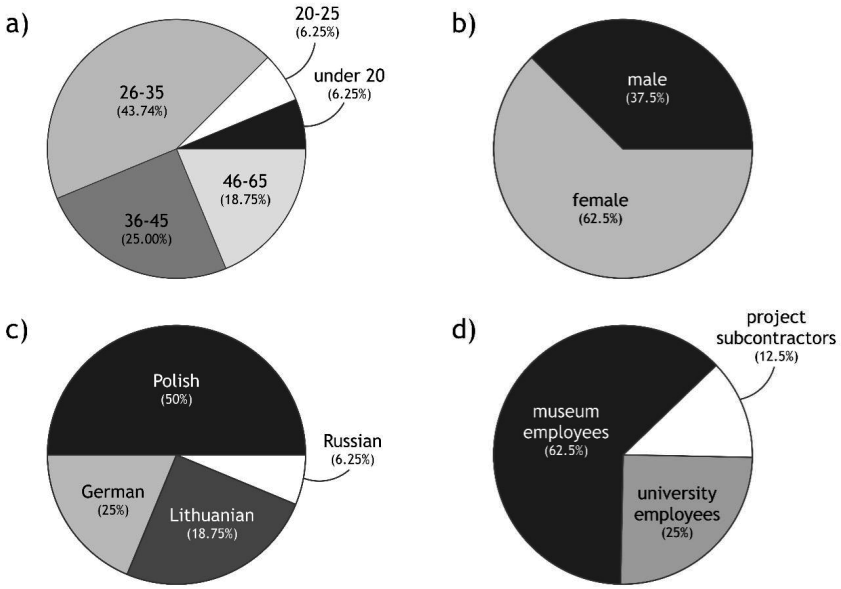


Figure 1. Age (a), sex (b), nationality (c) and employing institution (d) of the surveyed project participants

Source: own study.

The case project

The BalticMuseums 2.0 Plus project implemented multi-lingual electronic guides (e-guides) in three oceanographic museums: the NMFRI Gdynia Aquarium (Poland), the Lithuanian Sea Museum (Lithuania) and the German Oceanographic Museum (Germany). These museums had joined the consortium led by Stralsund University of Applied Sciences (Germany) co-operating with the University of Szczecin (Poland), the Museum of the World Ocean (Russia) and the Naval Museum Karlskrona (Sweden). With a total project budget of 1.1 million euro, part-financed by the European Union within the South Baltic Cross-border Co-operation Programme, the project team developed and shared multimedia content as well as translations, realized pilot investments for electronic devices and software and jointly tested the e-guides with visitors. Each museum applied different additional elements to their guided tours that exceeded the initial assumptions, according to their needs. While all the museums implemented multilingual e-guides, the Lithuanian Sea Museum developed tours in as much as six different languages, matching their broad international target group. NMFRI Gdynia Aquarium created a dedicated tour for kids, that had been developed together with teachers and kids' edutainment experts. The German Oceanographic Museum had built an outdoor tour in co-operation with the national park surrounding one of its locations. The BalticMuseums 2.0 Plus project, lasting from 2010 to 2015, was built on findings from the previous project, BalticMuseums 2.0, in which a similar project consortium had developed a prototype of an e-guide. This predecessor project enabled the team to build up mutual trust and gain experience in managing the complexity of cross-border, cross-industry and multi-organizational cooperation. Funded by the South Baltic Programme, the project had to comply with European, programme, and national regulations. Following the requirements of the programme, the project's lead partner was responsible for the overall project management and local implementation in its own organisation, while the partners were operating locally. The relations between the organisations were regulated by contracts.

Encountered obstacles

Figure 2 shows how the surveyed project participants evaluated the obstacles personally encountered during the realization of the project. The formal barriers connected to requirements, national or international law and internal rules were most challenging, as more than 40% of respondents assessed it as a serious or an average problem. More than 60% of the respondents did not consider sharing time spent on the project and other duties as deeply problematic. Similarly, communicating in foreign language and satisfying defined indicators was not a serious barrier to most of the respondents (almost 70%).

Only one of the surveyed project participants pointed to a problem from outside the list presented in Figure 2 – "many different tools to store and share information", noticing, however, that "their use became almost natural during the development of the project".

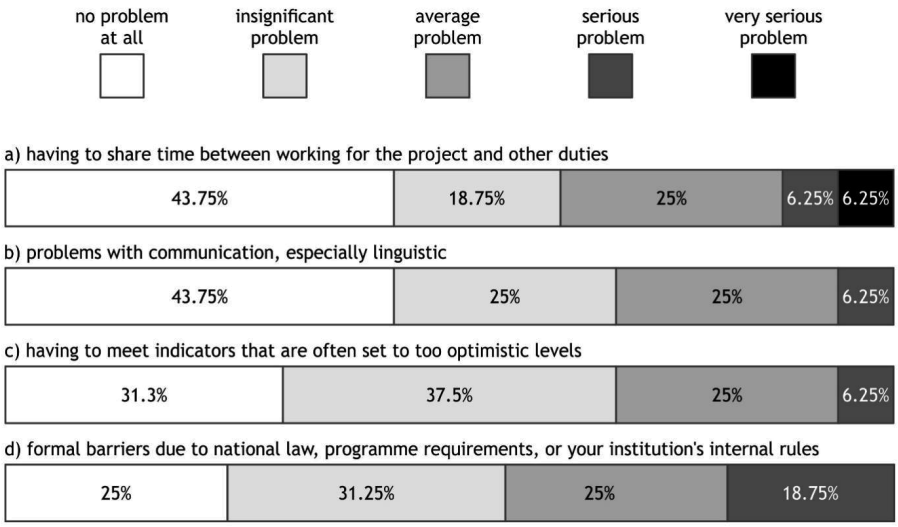


Figure 2. Evaluation of the obstacles personally encountered by the participants of the project during its implementation

Source: own study.

The managers pointed to other types of problems or challenges connected with project implementation, mentioning difficulties in:

a) collaborating with subcontractors as it covered two distinct areas (aquarium – and IT-related), whereas the museum managers were fluent only in the former, and the subcontractors only in the latter;
b) time management between the project and other duties;
c) upfront financing, especially due to the long delay (up to almost one year) between spending and the refund of the reported costs;
d) making museum administration staff agree to take part in the project.

Applied solutions

Due to the geographic dispersion of the institutions, the partners operated mostly as a virtual team. As a result, all but one of the surveyed project participants admitted that it made them learn to use new technologies. This was accomplished by knowledge transfer from other project partners and external experts, e.g. members of the advisory board. In fact, exchanging best practices and sharing knowledge was already found to be a key element of cross-border cooperation projects supported by the European Union (Ioannides, Nielsen, Billing, 2006, pp. 125–126).

This knowledge transfer was enabled by a culture of feedback and continuous improvement, along with formal and informal communication channels, and supported with a simple knowledge management system based on a wiki platform. Research outcomes show that such system has a positive impact on the project success (Gasik, 2011) and job satisfaction (Kianto, Vanhala, Heilmann, 2016).

The results of this knowledge transfer can be considered as a long-term benefit, as the surveyed project participants either have already used the technologies learned during the project outside of it (62.5%) or plan to do that in future (25%).

In the framework of a virtual team, face-to-face meetings gain additional importance. The rhythm, framework and content of these meetings were adapted to the project's needs, a success factor according to findings of Maznevski and Chudoba (2013). These meetings were dedicated to reinforcing trust by team-building measures at all partner locations, to take joint democratic decisions and to develop creative ideas.

All the surveyed project participants agreed that the face-to-face meetings were important for the project implementation, though they differed in what was their most important aspect. To most of the respondents (62.5%), it was "mainly because they allowed to establish direct interpersonal contacts and team-building, even if their substantive effects (information exchange and task coordination) could as well be obtained by using information and communication technology tools". Two other explanations (each chosen by 18.75% interviewees) were: "mainly because they allowed to make arrangements on priorities and task coordination in a quick and effective manner" and "mainly because they allowed for a more effective information exchange than information and communication technology tools".

All the three managers of the partnering museums declared that the participation in the project influenced their respective institution's marketing plans. The project's promotional success was based on several online and traditional campaigns that gained public interest, e.g. using billboards, search engine marketing, special events and an online photo competition. The project also used the programme's communication channels as well as national and international conferences to promote its products. It gained attention well beyond the programme region, being presented at a European Tourism Conference by the European Commission, in the meeting for members of the European Parliament in cooperation with the German Marine Research Consortium, and mentioned as a best-practice example in the European funding guide for tourism by the Directorate-General for Enterprise and Industry of the European Union (EC, 2015, p. 10). The educational effects of the project were also presented to marine educators and scientists during the European Marine Science Educators Association conference in Gothenburg, Sweden (EMSEA, 2014).

Acknowledged benefits

Asked what was the major benefit from the project (Figure 3), none of the surveyed picked the financial aid from the European Union as an answer that reflected their opinion; 62.5% chose the exchange of knowledge and experiences between the project partners, which confirms De Sousa's (2012) observation that cross-border collaboration is "a learning process", and 37.5% – establishing closer ties between the project partners which may provide results in the future in various ways.

Regarding the established contacts, Figure 4 shows how the surveyed project participants evaluated their various aspects. Exchange of information and experiences during the project was assessed as of primary importance by more than 80% of the questioned. More than half of the respondents considered institutional contacts as of primary importance. Interpersonal contacts were essential for almost 90% of the project associates. One person indicated another aspect as of primary priority, i.e. building EU consciousness based on shared values.

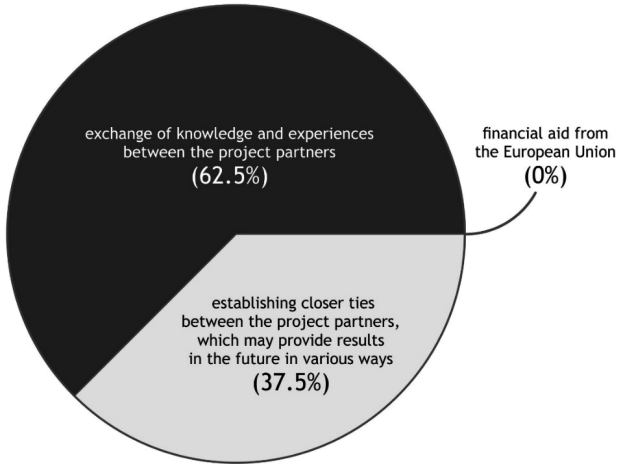


Figure 3. The primary benefit from the project in the perspective of its participants

Source: own study.

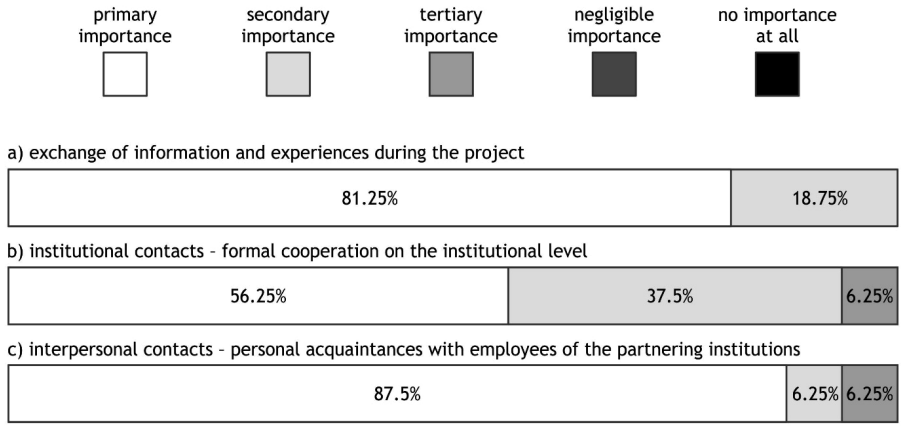


Figure 4. Evaluation of various aspects of established contacts by the surveyed

Source: own study.

The respondents considered project results important for their respective institutions mostly because of increased attractiveness for visitors (80% of answers) and introduced modern form of visiting (20%). No one indicated increased income from sold tickets as relevant. It is not possible to evaluate what was the particular impact of introducing e-guides on the number of visitors as this number is influenced by many other factors.

In the opinion of 80% of the surveyed participants, the main project outcome (the e-guides) would not have been introduced in their respective institutions had they not taken part in the project, with 50% pointing to high

investment cost and 30% to the high risk of commercial failure of the investment. Only 20% believed it would be introduced anyway, yet later.

Regarding the role of scientific partners in the project consortium, the museum employees attributed the main benefits to them being part of the project in:

- their contribution in organization and coordination of the project (indicated by 80%),
- the knowledge of technology they brought in (indicated by 60%),
- their different point of view which helped in solving issues that emerged during the project development (indicated by 60%).
- their direct contribution in the project implementation (indicated by 30%).

General evaluation of the project partnership

The experiences of project participation are generally evaluated positively by both museum and non-museum employees, as 87.5% of the interviewees declared they would like to get personally involved in similar international projects in the future, whereas none answered in a definitely negative way. All the three museum managers confirmed that they would support their respective institutions' involvement in similar projects in the future.

Comparing their expectations from the moment they joined the project to what it actually turned out to be, 50% of the surveyed declared they were surprised positively and not a single one declared to be surprised negatively, whereas almost 44% stated that the project turned out to be exactly what they had expected.

The participation in the project also positively influenced the mutual perception of the museums. Before the project started, only 20% considered the other participating museums as potential partners for cooperation; at the end of project, this number grew to 100%.

Limitations

The results presented here come from a case study of just one project. The survey was performed soon after the end of its successful completion, which may be considered as a bias factor contributing to overly optimistic evaluation of the project participation. On the other hand, benefits of the project fully unfold in a longer period of time after its termination.

Without a wide-ranged survey, it is impossible to tell to what extent the identified problems, solutions and benefits are characteristic for the case project alone or cross-border collaboration projects in general. Still, the study results, as they are, provide a valid base for future research in this domain.

Conclusions

In this paper, the case of a cross-border collaboration project aimed at implementing innovative solutions in South Baltic tourist attractions has been used to learn how people who personally contributed their work to the project perceived its implementation from a post-project perspective.

The results of the survey show that the representatives of the partner institutions share the positive opinion on the project, also expressed by the authorities and tourists. Although they are aware of the obstacles they had to overcome, such as formal barriers, time constraints, cross-industry communication challenges or pre-financing, for nearly all of them the project met or even exceeded their expectations.

While most of the respondents acknowledge that the new technology (e-guides) increased attractiveness of their respective sites for visitors and would not have been introduced without the financial support of the European Union, they especially appreciate its benefits in other aspects, such as the exchange of information and experiences, and developing contacts – even more interpersonal than institutional. The two key enablers of project success as perceived by the project partners are the established direct personal contacts and the applied knowledge management solutions.

The positive perception of the partnership allowed its further development: four of the initial five project partners continue the cooperation under the umbrella of a new project, BalticMuseums: Love IT!, also part-financed by the Interreg South Baltic Programme. This project aims at developing gamified multimedia Bring Your Own Device (BYOD) e-guides, hence it forms a natural continuation of the BalticMuseums 2.0 Plus project, which provided e-guides on museum-owned devices. Uniting nine project partners and eight associated partners, the new project significantly extended its collaboration network. The positive perception of the case study project of the participating institutions likely spread beyond the project network, encouraging other organisations to join the cooperation.

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THE LUBELSKIE REGION AS A BENEFICIARY OF THE EU COHESION POLICY FUNDS – EXPERIENCES AND PROSPECTS

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ABSTRACT

Lubelskie voivodeship belongs to Eastern Poland regions, these face numerous difficulties such as economic backwardness, underdeveloped infrastructure, ageing and depopulation, as well as border location. As a result, Lubelskie voivodeship was qualified as the least development areas (NUTS 2) in the European Union. The goal of the article is to investigate the scopes and the directions of allocation of the EU assistance in programmes in the years 2004–2006 and 2007–2013, as well as in the current programming period. Lubelskie voivodeship is an active participant of EU funds and uses the growth opportunities offered by regional programme and Development Eastern Poland Programme. Compared to other voivodeships, received one of the lowest values of co-financing under national programmes. The largest EU support for the Lubelskie voivodeship in the years 2004–2013 was spent on transport, enterprises, social and local infrastructure. In the current programming period, it is planned to increase funding for enterprises, strengthening the cooperation between science and business, low carbon economy and RES, labour market and social inclusion.

Introduction

Lubelskie voivodship belongs to Eastern Poland regions were historically poorly urbanized, industrialized, infrastructurally developed and undercapitalized and thus less socially and economically developed relative to the rest of Poland. The transformation has brought new challenges and regional disparities deepened. Many researchers point out that the processes of internationalization and structural change in CEE tend to favor

metropolitan and western regions, as well as regions with strong industrial base (Gorzelak, Goh, Fazekas, 2012, pp. 190–192, 226). Lower levels of both income per capita and productivity are also associated with lower level of entrepreneurship and innovation in rural regions (McCann, 2015, p. 19; Kudełko, 2013, p. 214). Academic research and evaluation studies show the impact of EU funds on the acceleration of economic growth and real convergence of the Central and Eastern Countries (Halmai, Vásáry, 2010, p. 236; Rapacki, Próchniak, 2010, p. 523) but have reached widely differing conclusions on the results of interventions structural and cohesion funds in theirs regions (Bachtler, Berkowitz, Hardy, Murvska, 2016, pp. 9–80). Critics of the EU's cohesion policy argue that it weakens the competitiveness of the regions (Rodrigues-Pose, Fratesi, 2004, p. 14; Gorzelak, 2007, pp. 24–31), accuse her lack of visible convergence and even between regions divergence (Smętowski, Wójcik, 2009, p. 52). According to macroeconomic models (Hermin, Mamor3, EuImpact, QUEST III) the Polish Eastern regions would speed up their growth and employment (Bradley, Untiedt, Zaleski, 2016; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2011; European Commission 2014, pp. 230–234). There are the differences between self-governments in the absorption of EU support and the directions of their spending, and consequently in the development results (Churski, Perdał, Herodowicz, 2016, pp. 105–114; Swianiewicz, 2012, pp. 9–24; Tomaszewski, 2011, p. 114). Is the Lubelskie voivodeship active participant of the EU Funds and uses the growth opportunities offered by the EU cohesion policy? The aim of the paper is to investigate the scopes and the directions of allocation of the EU assistance in programs in the years 2004–2006 and 2007–2013, as well as in the current programming period.

Method

The article provides a case study of the use of the EU cohesion policy Funds on the example of Lubelskie voivodeship. The analysis final reports on the implementation the National Development Plan for 2004–2006 as well as sectoral and the Integrated Regional Operational Programme, the National Cohesion Strategy 2007–2013, the Partnership Agreement for Poland, national programmes and the ROP Lubelskie for 2007–2013 and 2014–2020 have showed the region participation and its activity compared to others regions. Valuable data on the number of contracts signed and the value of co-financing from the EU Funds has been collected from the Final Reports prepared by Ministry of Regional Development (Ministry of Development) and the Board of the Lubelskie voivodeship, the KS SIMIK 07-13 and the website "Map of the EU grants". Statistical data showing some changes in this voivodeship has come from the Central Statistical Office and EUROSTAT.

Absorption of the EU cohesion policy funds in the Lubelskie voivodeship in the years 2004–2006

After Poland's accession to the European Union (EU) in 2004, the entire country has been provided with aid support as a less developed area (Objective 1). The lowest level of the GDP per capita was recorded in the Lubelskie voivodeship, which became the poorest region of the EU (achieving only 31.9% of the EU25 average in 2002 and 35% in 2004).[1] As a result, all voivodeships received support from four Structural Funds (European Regional Development Fund – ERDF, European Social Fund – EFS, European Agriculture Guidance and Guarantee-Guarantee Section – EAGG and Financial Instrument for Fisheries Guidance – FIFG) as well as the Cohesion Fund (CF). The funding from Structural Funds amounting to EUR 8.6 billion was allocated for the implementation of the

[1] Eurostat & Gross Domestic Product Regional Account in 2010, Central Statistical Office, Statistical Office in Katowice, Katowice 2012, p. 26.

Community Support Framework (CSF) and five Sectoral Operational Programmes (SOP), one Integrated Regional Operational Programme (IROP) and a Technical Assistance Programme (TA), as well as two Community Initiatives: INTERREG III and EQUAL. Absorption of the CF was based on the "Cohesion Fund Strategy". From 2000 to 2006 almost EUR 5.64 billion was raised from the CF and ISPA.

One fifth of the EU aid pool was allocated to the IROP implementation. As the only regional targeted program, it covered all voivodeships and was co-financed by both the ERDF (EUR 2530.4 million) and the ESF (EUR 438.4 million). The greater share of structural funds (about 60%) was allocated to the implementation of five sectoral Operational Programmes co-financed by individual funds. The distribution of the CF aid was due to its sectoral structure (national roads, motorways, railway, water and sewage).

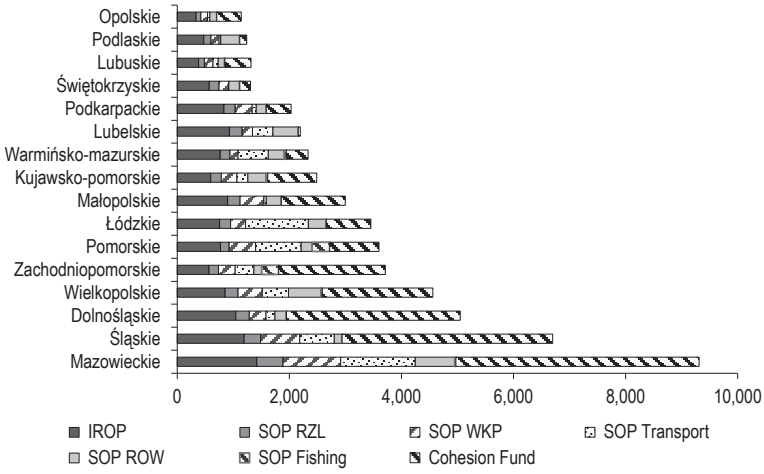


Figure 1. The value of funding under the Operational Programs and the Cohesion Fund in the period 2004–2006 by voivodeships (in PLN million)

Source: own estimations from data of Ministry Regional Development "Map of the EU grants" (August 2017).

An analysis of the regional distribution of support from the EU funds in the years 2004–2006 indicates that almost half of the funding was allocated for the co-financing of projects in the four richest voivodeships. As a result, the projects of the highest value were implemented there. Lublin's share in EU funds in the first period of membership amounted to 4%. In terms of the number of subsidized projects, the Lubelskie took second place after Mazovian voivodeship. However, this resulted in a lower average value of projects from the Lublin region compared to the national average. In the Eastern Poland, including the Lublin region, the bulk of EU co-financing was obtained from the IROP. The IROP has been more focused on expanding the basic infrastructure and improving the living conditions than strengthening the competitiveness of regional economies, which was to be its strategic objective (Szafran, 2010, p. 82). Due to an application of algorithm in the distribution of the IROP allocations, which marginally reflected the level of development of voivodeships, most of the funds (almost 1/3) was allocated to three most developed voivodeships: Mazovian, Silesian and Lower Silesian. The Lubelskie voivodeship took the next place (with the co-financing amounting to over PLN 800 million), distinguishing itself with the higher number of contract

concluded, in particular in terms of extension and modernization of local roads, water and sewerage networks, social infrastructure, improving access to ICT, professional reorientation of people from agriculture, promotion of entrepreneurship and creation the Regional Strategy for Innovation (Ministerstwo Rozwoju Regionalnego, 2010, pp. 40–215). However, the average value of these projects was lower or even the lowest in the country.

The Mazovia region also prevailed in sectoral programmes, and above all in the allocation of the Cohesion Fund. In addition, high shares of co-financing for sectoral programmes were recorded in the following voivodeships: Łódź (SOP Transport), Silesian, Wielkopolska and Małopolska (improvement of the competitiveness of enterprises, SOP WKP), Silesian, Lower Silesian, Lubelskie, Małopolska and Podkarpackie (development of human resources, SPO RZL), Pomeranian and West Pomeranian (SOP Fishing). In the case of Lubelskie voivodeship, there is a high demand for training and scholarship programmes, as well as support for starting own business. Furthermore, there was a relatively high share of spending on social infrastructure and health care. As far as direct corporate support is concerned, the subsidy in the Lubelskie region does not diverge from the national average and is intended mainly for investment in physical capital and access to external financing of investments. Due to the agricultural character of the region, significant aid (SOP ROW) was spent primarily on the modernization of agricultural holdings, agri-food sector and on facilitating the start of young farmers (Ministerstwo Rozwoju Regionalnego, 2008, p. 11). Although the main objective of the Cohesion Fund is to strengthen social, economic and territorial cohesion at national rather than regional level, it was the dominant source of aid in most voivodeships. The Lubelskie received the lowest share in the allocation of the CF, which required the implementation of large infrastructural projects and the provision of own contribution.

Summing up the first period of Poland's membership in the EU, it clearly show the dominance of sectoral policies over regional policies and, the prevalence of priorities focused on the development of the entire country, rather than the problematic and poorer regions, which was the Lublin region. Existing development disparities could not be alleviated in such short time by one regional programme which was, in fact, centralized. All voivodeships in the IROP, regardless of their specificity and adopted development strategy, had the same set of priorities and similar proportions of financing (Jankowska, Kierzkowski, Knopik, 2005, p. 288).

Directions of allocation of cohesion policy funds in the 2007–2013 programming period

The reform of the EU budget and cohesion policy has resulted in a change of its objectives, principles and financing instruments, based on the new legislative acts for the years 2007–2013. The entire country has been included in the Convergence objective which was a priority of the Structural Funds and the Cohesion Fund, accumulating over 80% of their financial resources. Two of the four Structural Funds remained: ERDF and ESF. Community Initiatives were also extinguished, with the exception of INTERREG, the programmes of which were taken over by the new objective – European Territorial Cooperation (ETC).

Between 2007 and 2013 the EU cohesion policy was implemented in Poland by the National Cohesion Strategy, 6 national and 16 regional operation programmes (ROP). Each voivodeship implemented its own programme, managed by the voivodeship self-government.

Table 1. Value of co-financing of projects implemented in the Lubelskie voivodeship according to EU programmes and funds, as of March 31, 2017

Program	Infrastructure Environment	Innovative Economy	Human capital	Development of Eastern Poland	TA	ROP Lubelskie	ROP Warmińsko-mazurskie
EU Fund	Cohesion Fund, ERDF	ERDF	ESF	ERDF	ERDF	ERDF	ERDF
Million EUR	966.67	220.90	559.87	649.04	2.5	1,132.78	0.003
% Share	27.37	6.25	15.85	18.38	0.07	32.07	0.0001

Source: based on the data of Zarząd Województwa Lubelskiego (2017), pp. 89–90.

During the period considered the Lubelskie voivodeship received, under the NCS and operational programmes, the co-financing from EU funds totalling EUR 3,531.786. The key source of support was the ERDF, from which the largest funds were received under the ROP in the Lubelskie voivodeship. Slightly less was obtained under the Infrastructure and Environment and Development of Eastern Poland Programme.

The total Cohesion Fund allocation for Poland (EUR 22.18 billion) was spent on the implementation of the largest in the history of EU Programme Infrastructure and Environment (IEP), with contributions from the ERDF (EUR 5.6 billion). An analysis of the division of IEP contracts by regions indicates that the following voivodeships: Mazovia, Silesian, Łódź, Pomeranian and Lower Silesian received over 50% of the EU subsidy. The Lubelskie voivodeship was ranked 11th among all regions. Most EU funds in the Lubelskie voivodeship were received by road and air TEN-T networks (EUR 619 million) and environmentally friendly transport (EUR 105 million). In comparison to other voivodeships, the Lublin region recorded a higher value of co-financing under health safety and efficiency of the health care system (4th place). The lowest positions were taken by the environmentally friendly transport and the energy security (13), and the water and sewage management (12).[2]

The total budget of the Human Capital Programme 2007–2013 (HCP) accounted for EUR 11.773 billion, including the entire ESF contribution in Poland (over EUR 10 billion). By the end of the HCP implementation, 4,300 co-financing agreements were concluded in the central component (I–V and X Priorities), for a total of EUR 3.44 billion, whereas in the regional component (VI–IX Priorities), 10 times more agreements were concluded (43.400) with the co-financing value amounting to EUR 8.8 billion. The largest value of subsidy in the regional system was given to the most populous voivodeships: Mazovian, Silesian, Małopolska and Wielkopolska. The next group, in terms of the amount of support, includes the Lubelskie voivodeship. The effects of the HCP implementation show the active participation of different types of beneficiaries from the Lublin region in the activities carried out within the priorities of the regional component. It was characterized one of the highest employment efficiency (70.1%), thanks to the support (returnable and non-returnable) for starting the business activity. This ratio was even higher for young people in the age of 15–24 and accounted for 73.8% of jobs, maintained after the implementation of the Programme (Ministerstwo Rozwoju, 2017, p. 259 and following). A high position was also taken by the employment effectiveness among beneficiaries, who included persons with a more difficult market situation due to their education, age,

[2] Final Report on the implementation of OP I&E 2007–2013 Ministry of Infrastructure and Development, Warsaw 2017, pp. 7 and 58–198 as well as KS SIMIK 07-13.

disability, long-term unemployment or rural origin. The Lublin region took the second place in terms of the ratio of enterprises included in the training support and a high number of people who completed the project.

The allocation of the ERDF for the Innovative Economy Programme 2007–2013 (IEP) accounted EUR 8.66 billion. The Lubelskie voivodeship was characterized by low activity of beneficiaries within the IEP (only 23 persons per 100,000 inhabitants received financing). Compared to other voivodeships, one of the lowest values of co-financing, in total and per capita (EUR 121.61) was also noted. The territorial distribution of support shows its concentration in the most developed regions and major cities, in particular the voivodeship cities. 240 contracts worth EUR 169.4 million were concluded in Lublin, representing 48% of the contracts and 43% of the total value of EU co-financing under the IEP for the entire region (Ministerstwo Rozwoju, 2017, pp. 9, 13, 61) The regional capital is the largest city and scientific centre in Eastern Poland. Hence, in comparison to other voivodeships of this macro-region, Lubelskie is distinguished by a higher share of support received for science and R&D (over 3% of 11% of the total co-financing for Eastern Poland) and investments in research and development infrastructure. A relatively high value of funding was received for counselling and financial support for innovative SMEs, venture capital funds, business angel networks, etc. Among 128 individual projects, the Lublin region submitted only 4 projects.

An additional support of the ERDF (EUR 2.39 billion) for the five eastern voivodeships (Lubelskie, Podkarpackie, Podlaskie, Świętokrzyskie and Warmian-Mazurian) was the Development of Eastern Poland Programme (DEPP). The functions of the managing authority were performed by the Ministry of Regional Development. The Lubelskie region was the major beneficiary of the DEPP, both in terms of the quantity and value of contracts. However, this translated into the lowest average value of contracts on financing (EUR 7.84 million) among the analysed voivodeships. From the point of view of support areas, the most resources were allocated to transport 45%, half less for the entrepreneurship and R&D, 13% of the co-financing for the social infrastructure, mainly for teaching facilities and 12% for the information society (Ministerstwo Rozwoju Regionalnego, 2017, p. 22). Under the Programme were implemented a total of 17 large projects, of which 4 were in the Lubelskie voivodeship.

More than EUR 17 billion was allocated to the Regional Operational Programmes, which accounted for 1/4 of the allocation from the ERDF. 3,129 projects co-financed by the EU, of a total value of EUR 1,135.6 million, were implemented under the ROP in the Lublin region. The analysis of the intra-regional distribution of support shows that every third project co-financed under the Programme came from Lublin, then from the Lublin county, the Puławy county and the Biała Podlaska county. The first three of the counties also received the most funds from the ERDF. The least projects were submitted from the following counties: Hrubieszów, Janów Lubelski and Radzyń. The least funds were received by the city of Chełm and the Opole Lubelskie county (Zarząd Województwa Lubelskiego, 2017, pp. 88–90). Significantly more projects were implemented in cities (2160), with Lublin on the top, than in rural areas (969). The companies dominate in terms of the number of projects (especially micro and small enterprises, then medium). However, the highest value of funding was received by self-government, especially communes and their organizational units. The dominant area of support is the transport (1/4 allocation). Subsequent position were taken by: R&D, innovations, entrepreneurship (23%), social infrastructure (almost 13%), environmental protection and risk prevention (9%), energy sector (7.8%), culture (5.6%), information society (5.3%), urban and rural renewal (4.4%) and tourism (4.3%).

Between 2007 and 2013 Poland participated in 10 European Territorial Cooperation programmes and in 2 cross-border programmes under the European Neighbourhood and Partnership Instrument. The Lubelskie voivodeship was a beneficiary of only the latter cross-border program: The Poland – Belarus – Ukraine. The program

budget amounted to EUR 202.9 million (including EUR 186.2 million from the ERDF). Beneficiaries from the three subregions of the Lublin voivodeship (including the Biała Podlaska subregion and the Chełm-Zamość subregion as the main support areas and the Lublin region as an adjacent area) received almost 1/4 of support from the Program. It included a total of 8 subregions from 4 voivodeships in this part of Poland, 15 support areas in Belarus and 6 in Ukraine. The highest subsidies were received by the projects concerning the competitiveness of the border area (Priority 1). Priority 2 focused on improving the quality of life, whereas Priority 3 – on networking and local community initiatives. Most of the operational programmes implementing the EU cohesion policy was continued in the next financial perspective.

Participation of the Lublin region in EU cohesion policy funds in the years 2014–2020

In the new programming period, the European funds system implements the Europe 2020 strategy and its eleven thematic objectives. The new Regulations Package includes a general regulation establishing common rules and principles for the five European Structural and Investment Funds (ESIF) and specific regulations for each of them (ERDF, ESF, Cohesion Fund, EAFRD and EMFF). The CSF details the system of implementing the ESIF in Member States and regions in the Partnership Agreement and programmes. The cohesion policy focuses on two priority objectives: Investments in economic growth and employment, and the European territorial cooperation. The first objective is supported by all funds. The level of co-financing depends on the category of the region (based on GDP per capita). For the first time in Poland there are two categories of regions: more developed Mazovian voivodeship (with PKB per capita above 90% of the EU average) and the remaining less developed 15 voivodeships (with PKB per capita below 75% of the EU average).

The total support for Poland amounts to EUR 82179.22 million has been allocated to 8 national and 16 regional programmes, the ETC programmes and initiatives co-financed by individual ESFI funds. The OP IE co-financed with the Cohesion Fund (EUR 22.5 billion) and the ERDF (EUR 4.9 billion) remains the largest national programme. It implements 10 Priority Axes, including six nationwide Axes and Axes IV, VII, VIII and IX, under which the less developed regions can receive EUR 5524.08 million (Ministerstwo Infrastruktury i Rozwoju 2014, pp. 106–109). The Lubelskie voivodeship plans to increase its participation in the programme, by submitting 9 large projects (including key projects for the construction of expressways within the road S17, S19, S12 and the bypass, the railway line No. 7 and the construction of the 400 kV power line from Chełm to Lublin). The IEP support was dominated by the transport (72% of allocation), followed by environment (2.8%), energy sector (10%), health and culture (each approx. 1.7%).

Another important national programme, from the point of view of the Lublin region, is the Eastern Poland (OP EP), which is a continuation of the DEPP and is directed to the same five voivodeships. However, the allocation of the ERDF under the current Programme has been reduced by 16% and distributed among 4 Priority Axes: Entrepreneurial Eastern Poland (35.97%), Modern Transport Infrastructure (45.81%), Supra-regional Railway Infrastructure (16.52%) and Technical Assistance (1.7%) (Ministerstwo Rozwoju 2017, p. 18). As a result, the OP EP focuses on supporting accessibility, the transport by road and rail, as well as increasing the use of public transport in Lublin and its functional area (over 62% of the ERDF funds), whereas almost half less is allocated for the support of innovative companies, especially SMEs and start-ups.

Two programmes were launched in place of the IEP: Smart Growth (OP SG) and Digital Poland (OP DP). Under the OP SG 15 voivodeships can receive support from the ERDF in the amount of 7,854.56 million for projects

corresponding to five priorities. The largest resources were provided for R&D in enterprises (44% of allocations), enterprise innovativeness (25.5%), as well as an increase of research potential (14.5%) and the environment and potential of enterprises to operate B+R+I (12%) (Ministerstwo Infrastruktury i Rozwoju, 2014, p. 138–139). Out of the total ERDF allocation for the OP DP for the less developed regions, EUR 2023.44 million were reserved mainly for the promotion of Internet access (45%) as well as the e-government and open government (43.6%), and raising the digital literacy of inhabitants (6.7%) and TA (Ministerstwo Infrastruktury i Rozwoju, 2014, p. 48). The Knowledge Education Development (OP KED) 2014–2020 is a national programme and does not have a regional component. Its budget covers 34% of the ESF allocation for Poland (the remainder goes to the ROP), 252.4 million from the Youth Employment Initiative (YEI) special budget line and national contribution. However, the distribution of ESF funds between the two categories of regions accounts i.e. 86.14% for the less developed voivodeships. The OP KED resources were concentrated on six priority axis, in particular the support of young people on the labour market (30% of the ESF contribution in less developed regions and the allocation of the YEI), higher education (25% of the ESF), public labour market efficiency (17.6%), social innovation and transnational cooperation (16%), health support (7%)e. YEI qualified for 10 voivodeships, where youth unemployment (15–24-years-olds) exceeded 25%. The Lublin region will not be supported by YEI.

Compared to the previous programming period, more than 80% of structural funds will be received by the regional operational programmes. Most of this allocation (EUR 29.2 billion) was divided among 15 less developed regions. According to the adopted algorithm for the division of funds the Lubelskie voivodeship will take sixth place and receive 7.6%, i.e. EUR 2230.96 million. The ROP Lubelskie budget was divided into 14 Priority Axes (including technical assistance). The highest EU support was provided for enterprises, in particular micro, small and medium-sized enterprises (approx. 20%), improvement of the energy efficiency and RES (18%), regional and local road and rail transport (12.7%), social infrastructure and labour market activation (over 10% each). There is a generally positive view of effectiveness of objectives relating to different forms of infrastructure in the Lubelskie voivodeship.

Table 2. Selected indicators of technical infrastructure, enterprises and labour market in the Lubelskie voivodeship

Dimensions (measure unit)	2004	2007	2010	2013	2016
Public roads with hard surface per 100 km² (km)	71.4	73.7	80.5	84.5	87.4
Expressways and motorways per 100 km² (km)	–	0.02	0.02	0.19	0.35
Standard-gauge electrified railways (km)	378	405	409	413	416
% share of passenger traffic in airports, Poland =100	0.0	0.0	0.0	0.8	1.1
Persons using water supply in % of total population	78.4	79.8	81.1	81.9	86.9
Persons using sewage system in % of total population	44.3	45.9	47.2	49.7	52.5
Persons using gas supply system in % of total population	36.4	38.1	39.2	40.1	40.7
Households furnished with computer with Internet access %	14.6	28.1	50.6	65.4	69.5
Entities entered in the REGON register per 10 thous. popul.	684	699	753	787	816
Enterprises expenditures on innovation activity (thous. PLN)	–	552.83*	592.84	532.57	630.15
Economic activity of the population in aged 18–59/64	71.2	72.2	72.2	74.0	74.2
Rate of registered unemployment, Poland =100 (%)	93.7	116.1	105.6	107.5	125.6

* By the year 2006.

Source: Local Data Bank.

Based on objectives of the Programmes, they were met and infrastructures project were delivered, contributing to overcoming of the infrastructure gap and improvement the quality of life. Infrastructure and transport is a prerequisite though insufficient for competitiveness enhancement (Jóźwik, 2013, p. 44). From the point of view

of endogenous growth, innovation is essential, and their source is private entrepreneurship and human capital (Murzyn, 2010, pp. 226–227; Olechnicka, 2007, pp. 55–74). As a poorly urbanized area, there are no large growth centres beside the capital (Biała Podlaska, Chełm, Puławy and Zamość act as subregional centres). The thematic and territorial nature of the EFSI intervention has been highlighted for the years 2014–2020, as evidenced by the integrated territorial investment (ITI), community driven local development (based on LEADER experience) and joint action plans. ITIs are implemented under the ROP and indirectly under the national programmes (IEP and the Eastern Poland) as an instrument of support for cities and their functional areas. Lublin and its Functional Area (LFA) is one of the 17 ITI areas for voivodeship cities and will receive EUR 105.4 million, i.e. 5% of the ROP allocation. Moreover, four subregional cities (Biała Podlaska, Chełm, Puławy and Zamość) will implement the Strategic Territorial Investments, on which 2.9% of the ROP allocation will be spent. The support for rural areas represents in total approx. 50% of the Programme allocation (i.e. The Community-led Local Development). Interventions financed under the ROP are complementary to the ETC programmes. One of the eight Polish projects submitted to the Transnational Cooperation Programme Central Europe with a value of EUR 16.132 million from the ERDF, comes from the Lubelskie voivodship. Six projects from the Lublin region, were qualified in the selection procedures for the interregional cooperation programme Interreg Europe. In addition, the areas of the Poland-Belarus-Ukraine Programme continue the cooperation supported by the European Neighbourhood Instrument and the ERDF (PLN 183 million in total).

Conclusions

In the period of Polish membership in the EU the external convergence is faster than the internal. The regional income per inhabitant of Eastern Poland remains low compared to the EU average (from 47% in the Lubelskie). However, in the years 2010–2015 the GDP growth in the Lublin region is noticeably faster in comparison to the regions of Eastern Poland (with the exception of the Podkarpackie), as well as the Kuyavian-Pomerania and Opolskie voivodeships. The largest funds from the EU were received by the richest and better developed voivodeships. Thanks to the establishment of a separate programme for this macro-region and the use of ROP allocation, the participation of Lublin region in the acquisition of EU subsidies is growing. The "catching up" process takes place in the Lublin region at the lower level of development and requires many years of structural changes (Kudełko, 2013, p. 214). The Lublin region is still characterized by low industrialization and a high share of agriculture in the GVA (almost twice as high as the national average), and on the other hand, there is an above-average share of the services sector (66.2% vs. 62.8% for the country). Both in terms of the quantity and value of concluded contracts on the EU subsidies, Lublin was the leader (EUR 860.6 per inhabitant of the capital vs. EUR 530.66 in the voivodeship under the ROP co-financing 2007–2013). The largest EU support for the Lubelskie voivodeship in the years 2007–2013 was spent on transport (24.87% under the ROP and 42.46% within the national programmes supported by the EFRR), enterprises, research and innovation (22.8% – ROP and 15.67% – national programmes), and subsequent position are taken by the social infrastructure (including higher education). During the current programming period it is planned to increase funding for enterprises, strengthening the cooperation between science and business, low carbon economy and RES, labour market and social inclusion. The participation in the Cohesion Fund will be increased thanks to the co-financing of major road, rail and energy projects under the OP IE 2014–2020. The requirements for large investments, including the provision of own contribution, constitute

an obstacle for the use of this programme. The greater emphasis of the EU on the use of extra-support mechanisms encourages a greater use of repayable funding.

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CHARACTERISTIC AND TYPOLOGY OF CROWD MOTIVATORS TO CROWSOURCING PLATFORM CONTRIBUTION

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ABSTRACT The first part of this article discusses the concept of crowdsourcing based on classification of tasks and motivators of crowd participants. The second part describes the results of a crowdsourcing platforms analysis, whose aim was to help determine ways to motivate crowd participants, in relation to the specified typology of performed tasks.

Introduction

Crowdsourcing is a concept of engaging a motivated crowd to carry out tasks of varying degrees of complexity. The development of Internet technology has revealed numerous distributed resources that are at the disposal of online communities. The key resources from the organization's point of view are knowledge, creativity and free time, which, when combined with intrinsic motivators of participants, may lead to the implementation of tasks

at a higher level of efficiency. The examples of organizations that effectively use the combination of the above-presented factors are crowdsourcing platforms.

The aim of this article is to present the essence of crowd motivation in the context of tasks carried out within crowdsourcing. The paper uses the methods of literature review, case study analysis and synthesis.

Crowdsourcing typology by character and complexity of tasks carried out by a crowd

Engaging a crowd from outside the organization into implementation of tasks previously assigned to employees of the company on the basis of voluntary cooperation has become a completely new paradigm of company management (Howe, 2008, pp. 23–47). As the main creator of crowdsourcing concept, J. Howe defines it as the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call (Howe, 2006, p. 5). J. Howe classifies crowdsourcing by types of resources possible to be obtained from a crowd, namely knowledge, creativity, finance, and opinions (Brabham, 2013, pp. 75–80). A different approach is presented by Brabham, who defines crowdsourcing as a strategic model to attract an interested, motivated crowd of individuals capable of providing solution superior in quality and quantity to those that even traditional forms of business can (Brabham, 2008, pp. 85–90). In his works, the author underlines the crowdsourcing typology that is based on the nature of tasks carried out by a crowd . He also emphasizes that the manner and type of tasks carried out by a crowd are significantly related with the motivation of individual crowd participants. (Brabham, 2013, pp. 85–90).

Table 1. A problem-focused crowdsourcing typology

Type	How it works	Kinds of problems
Knowledge discovery and management	Organization tasks a crowd with finding and collecting information into a common location and format	Ideal for information gathering, organization, and reporting problems, such as the creation of collective resources
Broadcast search	Organization tasks a crowd with solving empirical problems	Ideal for ideation problems with empirically provable solutions, such as scientific problems
Peer-vetted creative production	Organization tasks a crowd with creating and selecting creative ideas	Ideal for ideation problems where solutions are matters of taste or market support, such as design or aesthetic problems
Distributed human intelligence tasking	Organization tasks a crowd with analyzing large amounts of information	Ideal for large-scale data analysis where human intelligence is more efficient or effective than computer analysis

Source: Brabham (2013).

The implementation of tasks regarding knowledge discovery and management is possible when a crowd is engaged in working towards joint projects concerning small communities, municipalities and towns. In this case, collective engagement in problem solving and information collection is more important than the activity of a single crowd participant. The effectiveness of problem solving depends on the amount and accuracy of information obtained by the crowd participants. On the other hand, broadcast search concerns tasks that require, first and foremost, expert knowledge of crowd participants and creative approach to problem solving. For the above reasons, individual crowd participants who accept the challenge and try to win on a competitive basis with other participants are becoming more important.

Peer-vetted creative production may be adapted for tasks that require the skills of designing and creating artistic visions, ideas and solutions that are often based on aesthetic impressions. By solving tasks from a particular group, crowd participants additionally take part in a complete process that includes such stages as creating, evaluating and selecting ideas. In turn, distributed human intelligence tasking concerns simple activities. In this case, of great importance is the size of crowd, with efficiency and correctness of the tasks performed constituting a key challenge for individual participants.

As presented in the typology of tasks carried out in crowdsourcing, strict demands are imposed on crowd participants, and thus their identification and characterization becomes more significant. There is consensus among researchers concerning the fact that a crowd does not constitute a homogeneous mass consisting only of amateurs. J. Howe indicated that there are many self-employed experts among crowd participants. In this context, Ch. Leadbeater uses the term "professional amateurs", i.e., people who are enthusiasts in a given area, possess specialised skills or knowledge, which are, however, not always evidenced in a formal way, e.g. by an academic degree (Howe, 2008, pp. 90–98). Depending on the nature of the tasks carried out, the participants of the crowd differ in regards to their level of professionalism. In the case of communities performing tasks on iStockphoto platform, 47% described themselves as "professional", 23% as "hobbyist" and 14% chose the term "amateur" (Brabham, 2013, pp. 85–90). Likewise for InnoCentive platform, where 65% of providers of the best solutions have a PhD degree, and 20% have undergone a specialist training, often in the field of science. In view of the above, it can be concluded that the crowd of "specialist amateurs" is a new group of potential employees, who, although operating outside the organization, are ready and motivated to engage in solving tasks of varying complexity.

Motivation of the crowd and the typology of tasks performed in crowdsourcing

As stated above, a crowd constitutes a heterogeneous group of motivated participants. Numerous research in the scope of group motivation has been carried out with the aim to find the reasons for involvement of online communities in the implementation of tasks of varying difficulty. The research indicated that crowd participants are subject to intrinsic and extrinsic motivations (Battistellaand, Nonino, 2012, p. 557) when performing their tasks. Intrinsic motivation concerns psychological-emotional sphere and includes stimuli that trigger specific, targeted reactions and behaviours of individuals in the crowd. These stimuli comprise, among others, freedom of action, the ability to use own skills (Mazur, 2013, pp. 159–163), agency, the ability to express individual creativity, sense of group membership, as well as joy and fun (Battistellaand, Nonino, 2012, p. 558). Intrinsic motivation leads to longer-lasting and stronger satisfaction with the job or the performed task (Brabham, 2013, p. 85). Furthermore, intrinsic motivators generate better quality work carried out by a crowd than extrinsic motivating factors (Brabham, 2013, pp. 85–95). On the other hand, extrinsic motivation is triggered by external incentives such as financial rewards, recognition (Brabham, 2008, pp. 75–95), free products and services, reputation, and increase of professional status (Battistellaand, Nonino, 2012, pp. 558–559). Based on the research carried out in the discussed area, Brabham specifies the following key motivators (Brabham, 2013, p. 76):

- financial rewards,
- developing creative skills,
- establishing relationships and cooperation with other professionals,
- building up experience for future work,
- checking one's competences while solving difficult problems,

– developing friendships,
– sharing with others,
– fun.

As the researchers indicate, there are no ready-made compositions of motivators appropriate for various forms of crowdsourcing (Brabham, 2008, pp. 75–95). Very often the reasons behind crowd participants' decisions are financial incentives, even if they are not high and do not guarantee remuneration at a level comparable to that of workers employed in the traditional way. As indicated by the research on crowd motivation, participants more often undertake activities because of extrinsic and intrinsic motivators (Brabham, 2013, pp. 75–85). This combination is much more likely to affect the satisfaction, which derives from task performance. The following table presents motivators of crowd participants, who carry our tasks on specified crowdsourcing platforms.

Table 2. Motivators of crowd participants, who carry our tasks on specified crowdsourcing platforms

Task typology	Crowdsourcing platform	Task characteristics	Key crowd motivators
Knowledge discovery and management	SeeClickFix	Increasing the involvement of citizens to report problems and solutions in various areas of social life	Agency, the possibility to influence the situation, creating better living conditions of local communities
Broadcast search	InnoCentive	Providing unique solutions to problems in various fields of science.	Financial rewards. Satisfaction from solving difficult problems. Participation in a community of professional connected solvers
Peer-vetted creative production	ThreadLess	Designing graphics for t-shirts. Voting and selecting the best projects	Financial rewards. Developing creative skills. Participating in a community of creative people
Distributed human intelligence tasking	Clickworkers	Creating, proofreading and translating texts. Collecting and segregating information. Sharing opinions, participating in surveys	Financial rewards. Gaining experience and developing competences

Source: own work.

In the case of tasks requiring the involvement of specialist knowledge, financial incentives play an important role. It is worth noting that payment for the winning idea should be high, as the essence of the task comes down to the complexity of the problem. As indicated by the research, an important motivation to act for crowd participants is the challenge itself, ability to test one's skills, as well as a chance to compete with other solvers. The reason why participants carry out tasks requiring creation of unique, aesthetics design projects is that they need to prepare a portfolio of completed works as well as to improve their skills. Crowd participants are aware that the payment for the task will depend on the degree of their involvement and professionalism. Different motivators are related to making decisions on carrying out micro tasks, of which the key ones are financial rewards often combined with convenient working conditions and, in particular, the freedom to decide about the place and time of performing the task. Motivators which result in crowd involvement in the above-described social tasks, where collecting and sharing information constitute the crux, are strongly related to intrinsic motivation. The intrinsic motivators deserve special attention in this case, as the participants, acting for the benefit of local communities, are often motivated by agency and the need to have a real impact on changing living conditions.

Analysis of activities related to the acquisition and motivation of crowd participants on crowdsourcing platforms

Crowdsourcing platforms, which implement the business model based on engaging a crowd of participants in performance of strictly defined tasks, were subject to netnography research. The aim of this research was to identify ways to engage and motivate a crowd to perform tasks that are a key element of the offer of selected crowdsourcing platforms. The analysis included platforms chosen in accordance with the described typology of tasks proposed by Brabham.

The core of crowdsourcing platforms constitutes engaging a crowd of participants in implementation of given tasks on the basis of voluntary cooperation. In practice, this implies involvement of a big group of people located in different parts of the world. Effective interaction with a dispersed crowd of participants forces crowdsourcing platforms to develop both the appropriate tools for communication and implementation of commissioned tasks, as well as clarify the terms of cooperation. Taking into consideration the above-described characteristics of crowd, platforms, acting as organizations, should strive to engage participants that are selected in accordance with the typology of tasks assigned to a particular crowdsourcing platform.

In the case of crowdsourcing platforms that commission micro-tasks, it is essential that the tasks are performed flawlessly and efficiently. For these reasons, the above-described Clickworker platform, when engaging the crowd participants, initially accepts all users who have declared their willingness to cooperate and defined their competences. Each participant can choose the type of task and the time needed for its completion. Next, the task performed by the participant is checked in terms of correctness and efficiency of implementation. In this way, the best users can qualify to the premium group, where attractive tasks are assigned to people with better rating. This makes it possible for the involved participants to be better rewarded and get more interesting tasks, whereas the platform gains motivated, efficient participants. A different example of a micro task platform is TestBirds. Its users are entrusted with testing ideas and products from various brands. The diligence and engagement of testers result in their inclusion into “Top Tester” groups, where interesting innovative projects are often implemented. The crowd involved in TestBirds platform does not only receive financial rewards for completed orders, but also has the chance to participate in exceptional tasks, which, as the opinions of the participants indicate, is a strong motivator. In both described cases, the crowd participants are focused on financial rewards and convenience of carrying out tasks, whereas conditions for the cooperation proposed by platforms relate to the key motivators as indicated by the acquired crowd of participants.

InnoCentive crowdsourcing platform engages a crowd of solvers by offering them a high financial reward for the best solution, as well as including the winner into the group of distinguished solvers. Furthermore, all users, who implement tasks on InnoCentive platform, create a community of solvers, which is supported by mentors belonging to the aforementioned platform.

Crowdsourcing platforms which engage a crowd to implement creative design ideas, advertise, first and foremost, the opportunity to participate and achieve victory in a competition for the best project, present ideas to a wider group of recipients, have projects evaluated by other creators, as well as obtain a reward for the winning project. An example of such platform is ThreadLess, where the engaged crowd very often plays the role of creators, opinion leaders and promoters of graphic ideas. Another platform that works similarly is 99designs, which engages designers and graphic designers from all over the world to solve graphic tasks. Although crowd participants

belonging to this platform receive a relatively low financial reward, by taking part in the contest, they can present their previous achievements to a wide group of potential buyers. A different way of engaging a crowd in task completion is implemented by SeeClickFix crowdsourcing platform, whose participants include citizens, residents of cities, districts or regions. The platform provides mainly tools to facilitate the collection and transfer of information necessary to solve a problem, make a decision, or develop a project for specific communities. At the same time, it should be stressed that SeeClickFix concentrates mainly on the intrinsic motivation of its users, who, because of the agency, commit themselves to social activities.

As it becomes clear from the analysis above, crowdsourcing platforms involve a crowd to carry out tasks while taking into account two important factors:

- type and complexity of the task assigned to a crowd,
- crowd characteristics, with particular emphasis put on motivators evoking the willingness of individual participants to take actions.

In practice, this means that as the complexity of the task and the demand for specialist knowledge or creative thinking increase, the importance of intrinsic motivators also becomes more important. Platforms must adapt conditions of co-operation with participants, so that they will support the intrinsic willingness of the crowd to carry out actions. This way of operation is implemented by, among others, InnoCentive and ThreadLess. In the case of a repetitive job, where efficiency and the number of completed tasks are key factors, it is important to design a system of financial rewards offered by a platform, which will reward participants who best meet the above expectations. As stated by the Clickworker employees, the reward scheme implemented by the platform is effective and provides the expected benefits.

It can be seen from the performed research that platforms, operating as online companies, almost in all analysed examples have well-developed rules of cooperation with crowd participants as well as possess appropriate tools. Nevertheless, there can also be observed problems regarding informing about the benefits resulting from starting cooperation, which may, in turn, negatively affect crowd participants' will to get involved in the task. Information in this scope is very often hidden in the platform's resources. Although the examined platforms describe in detail the principles of payment, they forget to present other important information that triggers the will to take action. It must not be forgotten that participants voluntarily undertake a task and often find the examined platforms on their own. Therefore, in order to maintain their interest and find intrinsic motivation, platforms should adapt the way incentives are created and communicated to the characteristics of crowd participants.

Conclusions

According to the definition presented at the beginning of this article, a motivated crowd may in some parts effectively replace workers who are employed under the generally accepted principles. Premises that support this assessment are:

- motivated participants of the crowd will more willingly and effectively carry out the commissioned activities,
- a larger number of participants acquired for the implementation of the order increases the chances of finding an attractive solution, preparing interesting ideas or implementing a large number of small tasks,
- engaging the motivated crowd can significantly reduce the organization's operating costs.

It should be noted that crowdsourcing works especially well in the two following areas. One of them is the area that requires knowledge and creative thinking, where specialists moved by intrinsic motivators can most often

be found. The other worth mentioning area is a place where crowd participants undertake small tasks encouraged mainly by financial incentives.

Involving a motivated crowd in carrying out tasks can also take place in traditionally organized enterprises and support, inter alia, activities in the areas of innovation and marketing development. Engaging the motivated crowd from outside the company means going beyond generally accepted ways and standards regarding the company's activities. It is also an expression of openness and the ability to build relationships between the organization and the environment.

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DETERMINANTS OF THE SUCCESS OF THE PROJECT „IMPLEMENTATION OF CSR STRATEGY" IMPLEMENTED IN A MICROENTERPRISE – CASE STUDY

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ABSTRACT

The aim of the article was to collect the most important factors that had an impact on achieving success in implementing the CSR strategy in a microenterprise. The author discussed the most important concepts related to the CSR strategy. The article also presents the specificity of the microenterprise operating in the rural area, including the barriers encountered and the benefits. Based on the research and analysis carried out, the article lists the main factors that have influenced the successful implementation of the CSR strategy in this company. The analysis of this implementation and its implications can constitute a set of good practices for managers who will implement CSR projects, especially in rural areas. The experience gained in the described implementation also shows how the stakeholders react to initiatives in the area of social responsibility.

Introduction

The project managers and organization managers are most often expected to achieve a success in the economic dimension (Hong, Kubik, Scheinkman, 2012, p. 3). Only few enterprises can afford a wider perspective: achieving economic success through sustainable social and environmental development. From the manager's point of view, determinants that influence the final project's success, including – but not limited to – economic

success, expected by the company's shareholders, should be considered particularly interesting. The main research goal of this article is to collect the most important factors that influenced the achievement of success, defined by the researched company, in the implementation of the CSR (corporate social responsibility) strategy in microenterprise X. Prior to the research, the research question was formulated: ''If the process of communication between stakeholders is properly taken care of before and during the project implementation, then will the success of the project be greater and factors influencing its achievement easier to identify?". The research was conducted among the management, employees and stakeholders of the research project by means of a research questionnaire supplemented with the analysis of project documentation and direct interview with representatives of the above groups. As part of the case study analysis, a total of 47 questionnaires were collected within 14 days, which after an in-depth study were supplemented with information obtained in direct interviews carried out during the next 3 weeks. The questionnaires contained closed questions with the possibility of choosing several answers, while during the interviews, both closed and open questions were asked.

Project, project success and measurement criteria

An overview of the project definitions referred to in the literature can be summarized after M. Trocki: these are unique projects of high complexity, determined by the period of their implementation, involving significant but limited resources, implemented by interdisciplinary teams of contractors, which due to high risks require special methods of preparation and implementation. (Trocki, 2012, p. 12). Many definitions of project success can be found in the literature. The simplest way is to describe it as "achieving a successful result of a given undertaking or reaching the intended goal in the field of life, art, science or politics." (Skalik, Strzelczyk, 2013, p. 265). The criteria of success are also often mentioned in the literature. The most frequently quoted criterion is that of the golden triangle (Atkinson, 1999, p. 377). According to this criterion, if the project is completed in the previously planned framework of three parameters, such as cost, time and scope (quality), it can be concluded that success was achieved. The wider approach defines success criteria, providing such parameters as: satisfaction of end users and stakeholders, benefits for stakeholders and organizations, and even benefits for project staff. Interesting criteria for the success of the project are proposed by M. Trocki (Trocki, 2012, pp. 7–23) indicating the purposefulness, feasibility, effectiveness, efficiency and usability. It is also worth mentioning the division of the criteria proposed by, A. Shenhar, O. Levy and D. Dvir, who share the criteria of success in terms of operational, tactical and strategic horizons (Shenhar, Levy, Dvir, 1997, p. 46). The literature review in this respect can be summarized by the model of the "square path" proposed by R. Atkinson (Atkinson, 1999, p. 342). This model defines the components of each path element that translates into the success of the project. Summing up all the definitions cited, one can adopt a definition of success consisting of three main areas: the golden project triangle, benefits for the organization and benefits for stakeholders.

CSR strategy in a microenterprise

To understand the specifics of the researched implementation, it is important to get acquainted with the most important concepts related to the CSR strategy. Authors dealing with issues related to the concept of "strategy" define it in many ways. Some, such as H.A. Simon, refer to the criterion of time, stating that "a strategy can be called a sequence of decisions defining behavior in certain intervals of time" (Simon, 1976, p. 123). Others, such as M. Moszkowicz, refer to the importance of the mission of the enterprise while defining this concept (Moszkowicz,

2000, p. 34). Some others, such as G. Johnson, K. Scholes and R. Whittington, in their definitions underline the role of stakeholders (Johnson, Scholes, Whittington, 2010, p. 21).

Analyzing the literature of the subject, one can find various definitions of CSR. They include also those that clearly indicate the strategic nature of this concept. J. Korpus believes that "Corporate social responsibility is an effective management strategy, an innovative way of building a competitive advantage in the market" (Korpus, 2006, p. 61). The document "A renewed EU strategy for 2011–2014 regarding corporate social responsibility" published in 2011 underlines the importance of CSR in strategic terms, indicating that "a strategic approach to CSR is increasingly important for the competitiveness of enterprises." (European Commission, 2011). According to J. Adamczyk, the CSR strategy is "comprehensive, formulated and programmed activities, covering relations not only with key stakeholders, such as clients, owners, employees, business partners, but also with social organizations, media, authorities, local and global community" (Adamczyk, 2009, p. 233).

All these definitions apply to all enterprises, without differentiating them due to their size, organizational structure and competitive potential. Theoretical considerations on CSR strategies actually enable such unification, however, economic practice often enforces a more individual approach. Not every microenterprise will be able to use such a broad approach as a medium-sized enterprise. Not every small company will decide to implement the strategy in all areas in which the large enterprise will do it. It will result from both the complexity of the relationship with the environment, the diversity of stakeholders, but also from the financial and organizational possibilities. In organizations, very often the pressure is growing to treat CSR as one of the areas of commercial activity and to expect business results from this initiative (Karim, Rangan, Chase, 2015, p. 56).

The approach adopted by X in the implementation of the CSR strategy resulted precisely from the above-mentioned factors. Relations with suppliers and recipients, including the microenterprise, were not different from other companies involved in the production of steel constructions and metal processing, while relations with the closest social environment required a special approach when defining CSR strategies. They were mainly derived from the fact that the company was based in a rural area (in accordance with the definition of rural areas adopted for the needs of the Rural Development Program for the years 2007–2013) and most of its employees came from this area (MRiRW, 2010).

The specificity of a company operating in a rural area

As J. Gonzalez-Benito and Ó. Gonzalez-Benito observed, the effects of the implementation are undoubtedly also influenced by the specificity of microenterprises (Gonzalez-Benito, Gonzalez-Benito, 2006, p. 91). Another factor specific to the analyzed implementation is related to the functioning of this company in the rural area. This is connected with specific barriers encountered by project managers as well as with some benefits. Company X, at the moment of starting the implementation of the project "Implementation of the CSR strategy" belonged to the group of microenterprises. The location of activities in the rural area was an additional challenge in the implementation. An in-depth analysis of stakeholders indicated that residents of the village in which the company had its headquarters were of key importance for the further implementation of the CSR strategy. The fact that most of the company's staff were also residents of this village had a great impact. On the one hand, it facilitated reaching a wider group of the local community, as Scott R. also wrote, and on the other hand it increased the pressure on the implementation team (Scott, 2016).

The company was exposed to a number of negative factors affecting its functioning: from "denunciations" about alleged environmental anomalies – which resulted in frequent inspections of the offices responsible, through the reluctance of property owners bordering the company – which hindered development opportunities, ending with the general negative image which, among other things, made it difficult to acquire a new staff. All these barriers have been analyzed and described prior to the implementation of the project. The summary is presented in Table 1.

Table 1. Barriers in the company X activity

Barrier/problem issue	CSR area	Stakeholders concerned
Inefficient use of human resources and production capacity of highly efficient devices purchased under previously implemented projects	employees, environmental protection	employees, owner, recipients, clients
Low awareness of employees regarding the impact of their partial activities on environmental protection in a broader sense	employees, environmental protection	employees, owner, local community, offices, state institutions, recipients, clients
Low awareness of suppliers and customers regarding their impact on the company's operations and indirect impact on the natural environment and the social environment	external stakeholders, environmental protection	employees, owner, local community, offices, state institutions, recipients, clients
Too low activity of the company in voluntary local activities	external stakeholders, employees	employees, owner, local community

Source: own elaboration.

Following the analysis, these barriers were assigned to one or several CSR areas and it was indicated which stakeholder groups are directly affected. The areas of CSR were defined based on the literature analysis carried out, including the theory of R. Spaemann, who brought social responsibility in business to five tasks (Filek, 1999, p. 126). On this basis, taking into account design guidelines, it was assumed that the CSR areas which will be managed by the company are: employees (including the owner), external stakeholders (suppliers, recipients, local community, local business, offices, business environment institutions) and environmental protection (primarily local, but also in the global scale by reducing the consumption of materials, energy, etc.). The owner of the company also agreed to the definition proposed by the project manager, which read: "As for the owner, CSR is identified with such a business run that will firstly take care about the company's employees and their families (this also applies to the owner) and then about the social area and environment located in the village of X and the commune of Y" (Szymański, 2013, p. 38). This definition was in line with the ISO 26000 norm (in force at the time of implementation) (PKN, 2012). At the same time, in the definition adopted for the implementation of this project, the importance of two groups of stakeholders, i.e. employees and the local community, was emphasized, which resulted both from the specific nature of the company's operations in the rural area and from the analyzes described in more detail below.

Determinants of the project's success

The research questionnaire covered a total of 47 people: 3 from the top management, 6 full-time employees, 5 seasonal employees and 33 non-company employees (suppliers, recipients, residents of villages and local officials). The research questionnaire was asked, inter alia, to indicate the main reasons for the success (or failure) of the project. The four most frequently mentioned by the respondents answers were selected. Next, representatives of the top management were asked to describe the actions taken in relation to the most frequently indicated reasons for success.

Table 2. The most frequent reasons for the success of the project – quantitative results of the research questionnaire

Most often indicated reasons for the project's success	Number of indications among respondents, divided into groups		
	management	employees	external stakeholders
Dialogue with stakeholders	3	10	28
Analysis of stakeholders	3	9	26
Defining strategic goals	3	8	23
Establishing management procedures	3	11	12

Source: own elaboration.

It turned out that based on the CSR definitions adopted for the project implementation and the actions undertaken related to the definition of implementation barriers, a decision was made to analyze the stakeholders before proceeding with the project. The results of this analysis together with the division criteria used are presented in Table 2.

Table 3. Stakeholders of the company X

Division criterion	Distinguished groups	Name of stakeholder
Meaning, significance	primary	local community, employees, suppliers
	secondary	competitors, clients, offices, business environment institutions
Origin	internal	employees, local community, owner
	external	local community, suppliers, clients

Source: own elaboration.

This division was consistent with the systematization presented by P. Wołczek, A. Skrzypek and R. Szymański, which divides the stakeholders into groups based on various criteria: significance, voluntariness, origin, market, urgency and the specific nature of the relationship between the environment and the enterprise (Wołczek, Skrzypek, Szymański, 2016, p. 60). The decision to conduct such an analysis was one of the reasons indicated for the success of the project implementation.

Another success of the project was the decision to enter into a dialogue with these stakeholder groups. Specific guidelines have been adopted on how to conduct this dialogue. It was also established that during meetings with stakeholders, a moderated discussion about relevant expectations and stakeholder assessments about the most important impact areas of the company will start, which in turn will help identify both the most active stakeholders and areas of CSR that require further in-depth analysis.

The strategic goals set by the company also contributed to the project's final success. These goals have been approved by the owner and the management team. At the same time, internal and external consultations were recommended for acceptance by other stakeholders.

The determinant of the success of this project should also include the fact that the outline of CSR management procedures was defined at the stage of strategy creation. The persons directly responsible for the implementation of CSR in the company were identified. In order to effectively monitor the implementation of the sustainable development policy in the company, key sustainability indicators were also set up, informing the management about

the status and level of achievement of the assumed goals. The principle was also adopted that the communication of these results to both internal and external group of stakeholders will be carried out on an ongoing basis. Appropriate communication with stakeholders is one of the basic principles that should guide CSR managers (Du, Bhattacharya, Sen, 2011, p. 1541).

Conclusions

The conclusions drawn from the research and analyzes carried out for the purposes of this article indicate that there may be many factors of project success, but in a specific environment, which is the rural area, the main ones include a detailed analysis of stakeholders and a well-thought-out, consistently implemented communication strategy with them. The surveyed company X completed its implemented project in the area of CSR, thanks to the use of these two activities. It carried out a multi-faceted analysis of the relationships it had with both employees, suppliers, recipients, cooperators, clients, offices, but also with the local community. On this basis, it adopted specific rules for communicating with these groups and consistently implemented them. Such an approach meant that project risks, which are most often caused by people, were recognized at an early stage of their fulfillment, which allowed the company to take pre-emptive actions quickly or to prepare to minimize their consequences if they were not avoided. Following the good practice manuals, this microenterprise operating in the rural area is an interesting example of the manager's skillful finding of the factors that were crucial for the final success of the CSR strategy implementation project.

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THE PATTERN OF DUE DILIGENCE OF THE ENTREPRENEUR PROVIDING THE PROPERTY PROTECTION SERVICE WHICH IS THE SUBJECT OF COMPULSORY PROTECTION

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ABSTRACT

Economic activity consisting in the provision of services in the field of protection of persons and property is an important branch of the economy due to the protection of public safety. It is subject to licensing, but the legislator goes even further, because the Act on the Protection of Persons and Property not only defines the principles of conducting this activity, but also indicates categories of areas, facilities and equipment, which ought to be subject to mandatory protection (Article 5 of Act of the Protection of Persons and Property, called later: APPP). The subject of this article the due diligence standard applicable to entrepreneurs performing protection services for facilities which are subjects to mandatory protection. The main goal is pointing out how it differs from the due diligence standard of entrepreneurs protecting other objects (not subject to mandatory protection). This issue will affect the scope of the entrepreneur's liability for improper performance of the contract for the protection service. Interpretation of existing legal regulations indicates that in the case of objects which are subjects to compulsory protection the entrepreneur's liability due to improper performance of the contract is more strict. There is an high level of the pattern of due diligence in relation to the general standard of due diligence to perform the protection service in relation to other facilities that are not subject to compulsory protection and they have no protection plans (art. 355 § 2 of the Civil Code called later: CC).

Introduction

The legislator requires that certain objects used for strategic reasons of functioning of the State, regardless of their ownership status, are subjects to mandatory protection (Gozdór, 2005, p. 14). These are objects that are not only public property, but also belong to private or public-private entities (e.g. banks, factories producing, renovating and storing firearms, military devices and equipment, as well as buildings and facilities located in the open areas

which destruction or damage may cause a threat to human life or health, the environment material damage, such as power plants, sewage treatment plants).These objects are burdened with a high degree of risk connected with numerous threats for these properties. Although theirs protection can be performed both by internal security services (being part of the organizational structure of a protected entity), as well as by entrepreneurs who provide this service based on art. 750 CC, however, the legislator introduced an additional form of administrative supervision which is called "agreement on a protection plan" that is not required to other facilities (Wojtal, Milewicz, 2008, p. 27).

Contract for the provision of property protection services

The legislator does not regulate the content of the contract for the provision of this service. Therefore, according to the doctrinal view, the contract for the provision of services in the field of property protection is an unnamed contract to which art. 750 CC is applied appropriately (Ogiegło, 2005, p. 372). In science, there are discrepancies regarding the legal qualification of this contract, either as a contract of diligent action or as a result agreement. For better understanding a nature of problem and resolving this dispute I start with analysis on issue, which is what is the subject of this contract. According to art. 3 APPP, protection of property means activities preventing crimes and offenses against property, as well as counteracting the occurrence of damage resulting from these events and preventing entry of unauthorized persons to the protected area. However, according to the doctrinal definition, the contract of diligent action includes the obligation of the debtor consisting in careful conduct in pursuit of a specific aim, which, however, the debtor has no obligation to achieve (Pajor, 1983, p. 162). The mere fact of not achieving the goal is not enough to accept their liability for damages. Additional legal requirement, which is needed for responsibility of entrepreneur, is his guilt. A similar view was presented in the judgment of the Court of Appeal in Katowice of 30 October 2012 (III AUa 226/12, LEX No. 1236507): „the basic criterion distinguishing the contract for the provision of services from the contract for specific work is the fact that the contractor is not obliged to achieve specific result."

Turning to the analysis of the scope of the entrepreneurs' duties in the security service, they are obliged to take actions described not only in contract but in the protection plan of object. They are obliged to maintain the existing state of security (protection purpose). If this goal (result) is not achieved, the issue of the entrepreneur's liability for occurred damages appears. However, the mere fact of not achieving the goal is not enough to accept their liability for damages. As legal requirement for taking responsibility of entrepreneur is his negligence which is the lightest level of guilt (contrary for contract for the work, in which, although a contractor acts with due diligence, but he fails to achieve the intended effect, he is liable for improper performance of the contract).

As to the burden of proof, from art. 471 CC comes out a presumption of guilt, which charges the debtor (who is the entrepreneur). Therefore, he must give evidences for all circumstances to prove a lack of his guilt. For example, he should prove that security staff have carried out all activities resulting from security procedures which are listed in the contract or protection plan of object, what in practice may be difficult to prove. The fact that there was no negligence in their actions, is required to be proved for the negative circumstance, that is why P. Pajor (1983, p. 164) rightly points out that it is easier to indicate the specific cause that caused the incident and which would not burden the debtor (in our case, the entrepreneur performing the service). The proof of lack of fault remains when a specific cause cannot be found.

As the conclusion, there is no doubt that for providing protection service the due diligence contract is much more appropriate than a contract for specific work. Nevertheless, under the freedom of contracts, the parties may

agree on contract of a specific result. If the wording of contract is unclear, the legal interpretation of such a contract depends on whether the entrepreneur is obliged to achieve a specific goal or he is only obliged to take action to pursuit this goal. Of course, the qualification of this contract does not depend on the lingual meaning of the separated terms used, but on the whole legal context, in which they are applied in the contract, in particular regarding the scope of liability of entrepreneur. An example is a contractual wording: "The Contractor takes full responsibility for damages arising as a result of non-performance or improper performance of duties by security personnel, as well as for losses resulting from burglary or theft or destruction of property by unknown perpetrators while performing protection by their employees".

Models of due diligence in property protection services

The contractor of the property protection service should proof that he carries out his service action with a due diligence to be released from the contract liability. Thus, the question arises of determining the content of the pattern of this professional diligence (art. 355 § 2 CC). In the literature the prevailing view is that it is an objective measure of diligence (Sośniak, 1980, p. 127; Nipperdey, 1957, p. 1781). This view is also found in common law systems (Cook, Oughton, 1993, p. 173). In this point, it will be discussed models of due diligence in property protection services. There are two models of due diligence. First one is applied to an entrepreneur, who conducts a business in property protection service for real properties which are subject of mandatory protection, but the second one is for real properties which are not subject of mandatory protection.

I start from the second model, which is less strict than first one. The entrepreneur protecting the object from outside the catalog referred to in art. 5 APPP should, in principle, follow contractual provisions, unless the rules of law state otherwise (it is Act on the Protection of Persons and Property). He is bound by the contract and by all documents, which are component part of it. The internal documents defining the procedures for the protection of the object, which have been „accepted" within the organizational structure of the entity ordering the service, should be attachments to the contract. Otherwise, these internal procedures are binding only the employees within internal structural unit, which is the subject of protection service, but are not binding for protection staff, who are subordinated to the entrepreneur. They become the source of rights and obligations for the contractor (service contractor), if they are included as an integral part of the contract (they will be listed therein as attachments).

So in this case the entrepreneur's liability for non-performance or improper performance of the contract is based on art. 471 CC, according to which the debtor is obliged to compensate the damage resulting from non-performance or improper performance of the obligation, unless the non-performance or improper performance results from circumstances for which the debtor is not liable.

Now I come to first model of due diligence for entrepreneur in the field of services related to property under the mandatory protection, it is shaped more strict. There is duty to prepare draft of protection plan for object, so entrepreneur is burdened with the higher level of precaution. He is obliged to predict potential risks connected with protected object. Thus, it is necessary to submit a draft of protection plan to the Police. Legal regulations defining the rights and obligations of the entrepreneur and security staff are mandatory. Therefore, the parties of contract for the protection service cannot modify the scope of statutory competences (rights and obligations), in particular the manners of use of direct coercion measures and firearms, referred to in the Act on coercive measures and firearms, in a manner that would lead to the violation of the mentioned regulations.

Significance of protection plan of object for standard of due diligence in property protection services

The entrepreneur shall act with due diligence if he follows the protection procedures based on the contract (and the documents constituting its components). However, the protection rules for an areas and objects, which are the subject to obligatory protection should be treated differently, because there is a document called a protection plan (the same remarks will also apply to the regulations referred to in art. 6 APPP). According to art. 7 (1a) APPP, the head of the unit, who directly manages the areas, facilities and devices listed in the records referred to in art. 5 (5) APPP, or a person authorized by him, shall agree on a protection plan to these areas, facilities and equipment with the Chief of Provincial Police, but in the area of terrorist threats, with the Director of the Internal Security Agency. It is an obligatory document, required by law (art. 7 APPP), so the entrepreneur providing service for this kind of areas and objects is obliged to comply with the arrangements resulting from this plan. This document binds the entrepreneur regardless of whether it has been delivered to him and is as an integral part of the contract or not.

What is more, it should be assumed that the entrepreneur's level of due diligence should be higher, because the objects mentioned above are strategically important subjects of protection (Enerlich, Wojtal, Milewicz, 2000, p. 14). Therefore a higher degree of predictability of potential threats is expected. It is reflected in the lingual meaning of term "agree". It is not a strict control measure used by the Police (Chief of Provincial Police). As a rule, administrative bodies use imperative means such as permission or consent. The agreement on protection plan, which is referred to in art. 7 (3) APPP, is a specific hybrid, which is a combination of administrative law construction and civil law construction (it includes both reconciliation elements or negotiation elements). Both parties, who is entrepreneur and the Chief of Police should cooperate to achieve common goal. From one side, the idea of how to organize a protection method should come from the applicant (the head manager of a unit whose property is subject to mandatory protection), but from other side, through this semantic flexibility of the term „agreement" the legislator gives an interpretive guideline that the content of a protection plan shall be agreed by both parties (the Police is due to correct any defects in this document).

It seems that purposely the legislator did not use the term "approval", but the term „agreement", which suggests that the Police cannot be passive and he is required to give constructive proposals for a protection plan. It is also worth to mention the comments of other authors who rightly points out that the legislator does not authorize the Minister of the Interior and Administration to issue executive provisions in this matter. The police take into account their own requirements, which are included in: Methodology for agreeing plans for protection of areas, facilities and equipment subject to mandatory protection by Police Headquarters Guidance (Kręgulec, Pajorski, 2015, p. 7). The term "agree" contains not only the element of conducting negotiations, but it should be treated as a suggestion for the administrative body (Police) to strive for a consensus, to which both sides should follow, because until a certain concept of protection service is formally accepted, the object to mandatory protection is not properly protected. It can therefore be argued that the decision to refuse approval is a final measure (if the civilian law element fails, i.e. negotiations). Nevertheless if such a refusal is issued, one of the objections that the party may raise in the appeal proceedings is lack of cooperation of the body in the procedure agreeing on a protection plan.

Thus, returning to the pattern of due diligence in the performance of the protection service in the area of compulsory protection facilities, the contracting entrepreneur is obliged not only to comply with the existing protection plan, regardless of whether it was included in the provisions of the contract to which he is a party, but also the he is responsible for taking into account the current threat. As the consequence of it he should making proposal

of the changes in this plan adapting the protection measures to existing risks and dangers (undertaking initiatives of a change of plan). Such a thesis is supported by the wording of art. 7 on connection with art. 26 (2) point 1 APPP, in which is said that the entity obliged to agree on the plan is the head of the protected facility, however the plan is prepared by a person entered on the list of qualified physical protection employees (or a person entered on the list of qualified technical security employees when the plan includes performing activities referred to in art. 3 point 2 APPP). T. Alexandrowicz (2001, p. 7) explains that the legislator divided activities in two parts. First kind of activities is done by the manager of organizational unit. He submits an application to agree protection plan. Second kind of activity is making draft of the protection plan which is required to be made by an employee with an entry on the list of qualified employees, because the first one usually do not have the required entry on the list of protection employees (Alexandrowicz, 2001, p. 7). In practice, it means that if the entrepreneur is the entity that performs this service, he will be liable with the preparation of the draft plan. Likewise, W. Kotowski (2003, p. 12) rightly pointed out that if the bank uses third party services, operational risk management should charge the service provider and thus the bank's management bodies are exempt from this responsibility, as they do not have direct control over the performance of services (Kotowski, 2003, p. 14).

Thus, as regards the level of due diligence required of an entrepreneur protecting an object, which is a subject to mandatory protection, it is higher than for other entrepreneurs in this field. The former should be expected to be more diligent in anticipating and preventing potential threats. His scope of duties that he should perform is listed in the plan of protection, which is agreed with the Voivodship Commander of the Police. If the provisions of the contract are inconsistent with the protection plan, priority is given to the protection plan.

Conclusions

Under Polish law, a private entrepreneur can provide protection services to both public and private property. However, an entrepreneur providing such a protection service relating to an object, which is a subject to mandatory protection is expected to follow statutory requirements, which are more strict than for other entrepreneurs in this area. The administrative agenda (the Police) controls the manner of performing this service, in particular, cooperate with entrepreneur in administrative procedure of agreeing on the protection plan. The entrepreneur is primarily bound by the protection plan, and only in the remaining scope by the provision of the contract of this service. However, in the case of contradiction as to the content of the contract and the protection plan, he should comply the requirements arising from the latter document. Therefore, his liability for improper performance of the obligation regarding protection services primarily covers the improper performance of the provisions of the protection plan that binds him by law, from the moment of signing the contract, regardless of whether such a document has been delivered to him as an attachment to this contract or not. In the remaining scope he shall follow the provisions of contract.

Method

The topic of this paper is related to national law. The main method is an analysis of Polish regulation, which may help to interpret national law. It dominates at earlier research stages. There is also a synthesis which leads to for setting proposals for a future legislative amendments (so called: conclusion de lege ferenda).

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FINANCIAL LITERACY AS A FACTOR OF CASHLESS PAYMENTS DEVELOPMENT. RESULTS OF SURVEY

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ABSTRACT The aim of the article is to analyze financial literacy in cashless payment. In the articles propose a hypothesis: financial literacy is one of the factor influence of cashless payments. This hypothesis is complemented by the statement that people with a higher financial knowledge and skills more often use cashless payments. In order to achieve the goal, it will describe the main factors of cashless payments. The article will also show the results of own research, which was carried out of the Foundation for the Development of Cashless Transactions using the research institute IPSOS. The own research shows the importance of financial literacy in the development of cashless transactions.

Introduction

Topics related to non-cash payments are a very important and multifaceted area of research investigation in sciences of finance. Their strength is in the diversity and complexity of the problem. Due to the pragmatic nature of cashless payments, there is a need to enrich their theoretical achievements. It is important to an acquire new knowledge of a descriptive and normative character because such knowledge allows explaining the phenomena

studied and to formulate recommendations for business practice in terms of the theory of cashless payments. In theory and practice, it is important to recognize and understand how financial literacy affects the development of cashless payments. The aim of the article is to analyze financial literacy in cashless payment. In the articles propose a hypothesis: financial literacy is one of the factor influence of cashless payments. This hypothesis is complemented by the statement that people with a higher of financial knowledge and skills more often use cashless payments. In order to achieve the goal, it will describe the main factors of cashless payments. The article will also show the results of own research, which was carried out of the Foundation for the Development of Cashless Transactions using the research institute IPSOS. The own research shows the importance of financial literacy in the development of non-cash transactions. The survey was carried out using the CAPI (Computer-Assisted Personal Interview) method, from February 9 to March 1, 2018. In survey was using a questionnaire. The survey was conducted on the Polish nation at age 15 and more. A total number of interviews was 1,100. To ensure the representativeness of the collected data, edge weighing was carried out to the structure of the Polish population aged 15 and more using rim weighting.

Factors influencing the development of cashless payments. Literature review

According *Programme for non-cash payments development in Poland for the years 2014–2020* (2015), that "in 2020, Poland is a country in which:

- society, entrepreneurs, and public institutions use non-cash payment instruments knowingly and commonly,
- favourable conditions are ensured for the development of non-cash payments through the use of a safe, innovative, competitive and effective payment system in Poland,
- there are no barriers to access and use of payment services associated with non-cash payments".

If Poland in 2020 has to be as mentioned above is necessary to develop cashless payments, which is dependent on many factors. Among the selected factors are the development of cooperation between banks, cashless network operators, banking, consumer bank association, the central bank, and the other (Figure 1, factor 1). Cooperation between institutions contributes to multidirectional activity and faster development of cashless payments. An example of such cooperation is a joint initiative of banks, Visa and Mastercard organizations, which enabled small and medium enterprises to use POS terminals for free (0 PLN). This initiative "Cashless Poland" is supported by the Ministry of Development and the Association of Polish Banks. The aim is to equalize the availability of non-cash payments with cash by doubling the number of terminals in the next three years, which according to the National Bank of Poland in the first quarter of 2018 were over 600 thousand (NBP, 2018, p. 1). A large role in cooperation in cashless payment is played institutions introducing regulations (Figure 1, factor 2). For example limitations in the field of cash settlements between companies. From January 1, 2017, the limit of cash payments in transactions between entrepreneurs dropped from 15 thousand. euros up to 15 thousand PLN (Polish Zloty), it is (around EUR 3 500). The limit applies to the transaction amount, not a single payment. This means that if the payment is an installment, the payment method should depend on the total amount of the transaction. The above limit applies to both domestic and foreign transactions. Another factor is technological development (Figure 1, factor 3), whose dynamic development allows introducing new solutions for cashless, including contactless payments or mobile payments. Technological innovations alone are not enough, necessary is infrastructure (Figure 1, factor 4), including an ATMs network or POS terminals. According to a data of Polish Central bank, at the end of 2017 in Poland, were 23,230 ATMs. Between March and December 2017 in Poland, the number of ATMs has decreased by

521 units. In the fourth quarter of 2017, there were 167.4 million cash withdrawal transactions in ATMs across the country. In comparison to the previous quarter (III Q 2017), there was a decrease in the number of withdrawals by 6.8 million, which was decreased by 3.9%. The value of withdrawals at ATMs in the fourth quarter 2017 dropped to 83.5 billion PLN. This is 1.8 billion less than was paid in the third quarter of 2017 (NBP, 2018, p. 1). Reducing the number of cash transactions (in ATM) which proves the development of a non-cash society. A factor conducive to the development of cashless payments is time (Figure 1, factor 5). If longer the instrument is on the market, the more consumers use it. The time of functioning on the market of non-cash payment instruments is related to factor 6 – consumer readiness (Figure 1, factor 6). Consumer readiness is consumers openness to cashless payments, new ideas in this area. In the initial development of non-cash payments market (1991 business cards, 1993 classic cards) was quite difficult. The Poles were very attached to cash, however, over time, openness to cashless payments was increasing. A big ally was time as well as knowledge (financial literacy) about new solutions. Last not but the is financial literacy, which is understood as effective and understandable. across the range of financial contexts, and to participate in the economic life (PISA, 2017, p. 49).

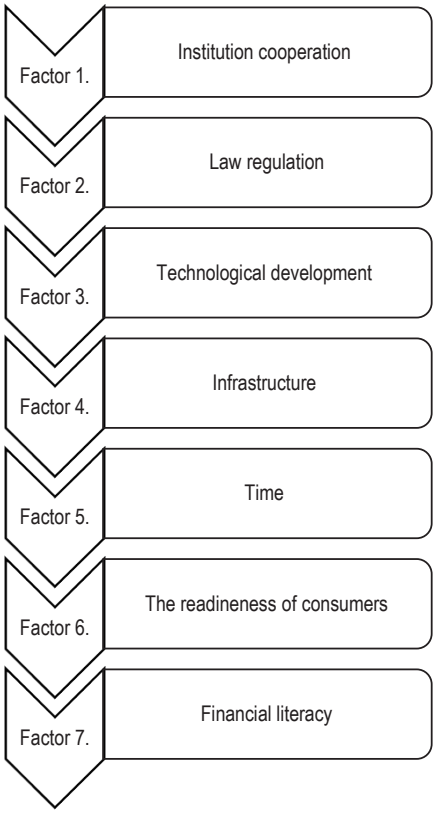


Figure 1. Main factors influencing the cashless payments

Source: own research.

Financial literacy conceptualisation. Literature review

Financial literacy is currently the subject of numerous professional and scientific discussions. Financial literacy can be defined as the "process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being" (Becchetti, Caiazza, Coviello, 2013, pp. 817–836). Financial literacy not only implies a certain level of financial knowledge, but also an ability to apply the knowledge in action (Xiao O'Neill, 2016, pp. 712–721). According to Romiti and Rossi (2014, pp. 1–37), higher financial knowledge helps individuals to monitor an optimal consumption and balanced portfolio of household with relation to finances. Financially illiterates cannot fully participate in today's economy as such (Gavurova, Huculova, Kubak, Cepel, 2017, pp. 206–219). The research Uzonwanne and Ezenekwe (2017, p. 123–139) show the impact of financial literacy on the cashless policy system in Nigerians life, using Lagos State as a case study. Results of questionnaire methods show that financial illiteracy has a negative impact on the utilization of the cashless system in Nigeria. Financial literacy is an important factor in personal finance management and also in cashless payment. A problem is also, that there is a sharp disconnect between how much people think they know and what they actually know (Lusardi, 2010, p. 20).

Methods of own survey

The primary (own) survey was carried out using the CAPI method from February 9 to March 1, 2018. Contents of the questionnaire: closed questions with an answer list and knowledge test in the field of payments. The survey was conducted on a nationwide sample of the population of Poland aged 15 and more. A total of 1,100 interviews were conducted. To ensure the representativeness of the collected data, edge weighing was carried out to the structure of the Polish population aged 15 and more using the interactive technique (rim weighting). Weighing will be performed in accordance with the structure of sex, age, and education. The scope of the primary study covered four issues:

- currently used payment methods,
- stimuli of the increase in non-cash turnover,
- payment methods that are an alternative to the cash payment,
- financial knowledge and financial skills in the field of payments (financial literacy).

For the purposes of the article, only one area of research is presented – financial literacy. The research was done under the scientific supervision of prof. J. Harasim and prof. Beaty Świecka. The research was made for the Foundation for the Development of Cashless Transactions using the research company IPSOS. Full results of the research were presented at the International Congress of Cashless Payments, which is held every year in March in Warsaw. A total number of interviews were 1,100 (15–60+ years old). In the survey, 52% were women's. People who use mostly cashless payments are people 25–39 years old (43%) and 31% (40–59 years old), and 60+ years old (9%) and 15–24 years (17%). Cashless payments are usually paid by people with higher education (36%), who have enough money for life but live economically (53%).

Results of own survey

The results of primary (own) research show that: the group using card or phones paying for products or services is slightly smaller than the group of consumers who pay mostly or only by cash. People who prefer cashless payments more often belong to younger age groups and more often live in larger cities, have a higher education level and higher material status. Consumers who prefer cashless payments are mainly driven by practical considerations (the speed of payment and the desire to avoid the hassle of using cash for example: remembering to have cash, no "small coins" for parking, waiting for the rest, etc.). The majority of consumers thinks that in every place should be able to pay cashless. Respondents have a low opinion of their knowledge about cashless payments. Only 1% asses that have the very good knowledge, 30% think that have a good knowledge, 26% poor, and 4% hard to say and 9% do not have knowledge about financial matters at all.

Consumers have a higher level of knowledge about the cashless payment of the longest functioning on the market, eg debit and credit cards, and much less on cashless payment shorter on the market, eg virtual or relatively recently introduced forms of payment such as PayU, PayPal or BLIK. This test result confirms the importance of the time factor and also shows the relationship between time and financial literacy. The longer occurrence of a cashless product is closely related to financial literacy being at a higher level (Figure 2).

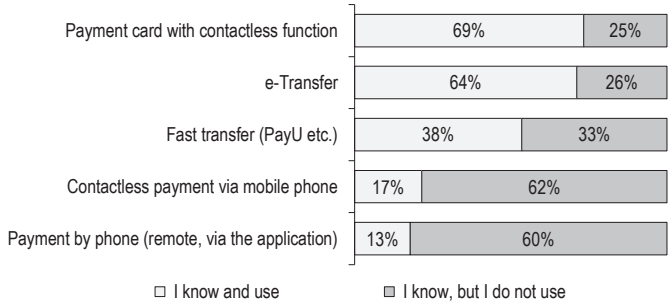


Figure 2. Knowledge and use of innovative forms of payment

Source: own survey.

Most consumers can use an ATM and payment card, more than half can buy and pay online, but only less than 40% would be able to pay by phone for shopping. Just like with financial knowledge, so it is also with financial skills. Most consumers have elementary financial skills, i.e. they can use an ATM and a payment card. Smaller financial skills consumers have to use recently introduced forms of payment, such as mobile payments, or payments using BLIK, or online payments. Financial skills are strictly correlated with the duration of the operation on the cashless product market and financial literacy. The longer the cashless product is on the market, the financial skills are higher. The vast majority of consumers would be able to behave properly in the case of a lost payment card or a request to provide access data to a bank account (Figure 3).

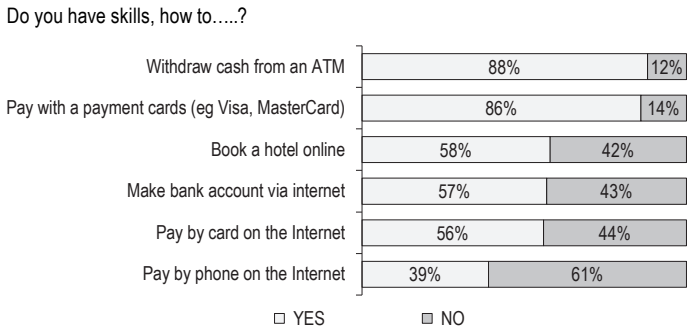


Figure 3. Skills to pay in different situations

Source: own survey.

Conclusions

Financial literacy as a set of financial knowledge and financial skills is necessary for everyone to who secure themselves in finance management, and who would like to be active in financial market. High level of financial literacy is the best way to prevent over-indebtedness, use innovation financial products. The results from own survey are:

1. Every fourth consumer acknowledges that his knowledge and skills in finance are weak.
2. Most consumers have elementary financial skills, i.e. they can use an ATM and a payment card. The percentage of consumers who can buy and pay for online shopping is much smaller, and almost 40% of respondents admitted that they could pay by phone for shopping.
3. The longer occurrence of a cashless payment product are closely related to financial literacy being at a higher level.
4. Consumers have the most knowledge about the most popular payment cards: debit, credit and contactless, but less about prepaid, virtual cards. The innovative forms of payment are also relatively less known (PayU, PayPal or BLIK).
5. People who prefer cashless payments have higher level of education and a higher material status.
6. People who have wider knowledge often use a cashless payment.
7. Financial skills are strictly correlated with the duration of the operation on the cashless product market and financial literacy. The longer the cashless product is on the market, the financial skills are higher. The vast majority of consumers would be able to behave properly in the case of a lost payment card or a request to provide access data to a bank account.

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INCENTIVE RISK IN SERVICE COMPANIES. THEORETICAL APPROACH

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ABSTRACT The aim of this article is to present the concept of incentive risk, i.e., a risk associated with undertaking incentive activities aimed at shaping employee involvement and attitudes towards the enterprise. The study was performed based on *desk research* method that comprises the analysis of the literature on the subject and reports published in the industry. The article indicates that all decisions concerning the motivation process bear risk, which is most often connected with the lack or an incorrect evaluation of the degree of satisfaction of individual employee needs. In order to lower incentive risk, evaluations in this scope should be constantly carried out, as the hierarchy of incentives for individual employees may be different.

Introduction

A crucial role in developing competitiveness of service companies is played by human capital, which is defined as stock of knowledge, skills, health, and motivation to perform labour, that are possessed by a person. This is a very specific resource of a company. It is characterized by non-transferability of property rights, which means that an employer, through the employment contract, acquires only the right to use, in a certain way, abilities, skills,

and experiences of employees, but does not become their owner. Therefore, human capital materialized in a given employee should be managed rationally, as it is only at the company's temporary disposal.

The management of human capital on the microeconomic level requires activities undertaken in several fields related to the presence of a person in an organization. Their aim is to optimally utilize work potential in order to increase efficient functioning and the value of an enterprise. There could be distinguished three areas of human capital management in a company (Tokarz-Kocik, 2017, p. 61):

- creation of human capital (planning and choosing personnel),
- development of human capital (training courses),
- shaping employee engagement (motivating).

Each of these areas is related to personnel risk.

Personnel risk is not a homogeneous category, which means that many partial types of risk can be distinguished – one of them is incentive risk that is the subject of the analysis presented in this article.

The aim of this article is to present the concept of incentive risk, i.e., a risk associated with undertaking incentive activities aimed at shaping employee involvement and attitudes towards the enterprise.

The study was performed based on *desk research* method that comprises the analysis of the literature on the subject and reports published in the industry.

Incentive risk as an element of personnel risk

Although risk is an ambiguous concept that is difficult to define, it does not always bring negative results, such as failure to obtain the intended goals (effects), deviation from the expected state, incurring higher than expected costs and/or losses. It also brings positive impact – an example of which could be risky activities, which despite the possibility to result in failure, may also constitute a real chance to gain or increase benefits, and be the proof of the entrepreneurship of people who undertake them. By exposing itself to risk, a company may significantly increase its chances to not only survive, but also develop. Therefore, it is not possible to achieve success without taking risk first. Moreover, not taking certain actions may lead to stagnation or even regression.

Modern service companies struggle with various types of risks (e.g., legal, market). One of them is personnel risk that is understood as engagement in activities concerning personnel in conditions of uncertainty (Lipka, 2002, p. 11). It is possible to distinguish several partial types of risks characteristic for individual areas of human capital management, i.e. recruitment, selection, evaluation and incentive risks.

One of the basic tasks of a company is to ensure sufficient level of staff with suitable competences. This is necessary, so that a company can freely react to changes taking place in the environment and adapt to them seamlessly. This area of personnel activities is related to recruitment risk, which results from volatility of phenomena on the labour market, as well as the mismatches of labour demand and supply in terms of quantity and quality. The mentioned phenomena are becoming more and more common due to increasing social mobility, as a result of, among others, Poland's membership in the European Union (Bizon-Górecka, 2009, p. 22). One of the consequences of this phenomenon is the depletion of available labour resources (Tokarz-Kocik, 2016, pp. 947–958).

Selection risk is related to the lack of certainty regarding the accuracy of choosing particular employees as people who can enrich the human resources of the enterprise (Lipka, 2002, p. 56). Therefore, it poses a threat that, instead of qualitative growth of human capital, it will lead to its impoverishment with all the consequences. Selection

risk occurs regardless of the labour market situation, as even in the case of excess of supply over demand for work, there is never an absolute certainty that the choice of employees is correct. The selection risk level is affected by:

- the HR policy model used (i.e. the sieve or human capital model),
- sampling technique used (where each is associated with specific types of risk),
- selection criteria applied by people performing it.

Another function of human capital management which is subject to higher risk is evaluation. Evaluation risk is related to the probability of incorrect selection of criteria and methods of assessment, inaccurate evaluation of the employee's characteristics, their behaviour at work and the results they bring. Not performing evaluation in order to avoid mistakes is not a good solution, as its result constitutes the starting point for various personnel decisions. When identifying the level of evaluation risk, the degree of objectivity of the evaluation procedures implemented in the company, including the evaluation interview, should be a primary factor.

The risk is also associated with the motivation process. The highest level of risk concerns achievement of a state that is in contrast to incentive activities, i.e. the state of employee demotivation, despite incurring specific expenditures aimed at improving satisfaction of employee needs. This state may result from the failure to detect risks at the operational level, which occur when applying individual salary and non-salary incentive arrangements. In this case, excessive, insufficient, and incorrectly directed effort of managers to shape the attitudes and behaviour of employees may prove to be harmful (Jansen, 2008, p. 266).

Incentive system should not only be consistent with the company's strategy, but also meet the requirements of job applicants (i.e., allow attracting appropriate employees). Failure to comply with any of the requirements increases incentive risk, and thus the risk borne by the employer (McGee, Rennie, 2012, pp. 20–29).

Moreover, decisions regarding investment in employees are subject to a higher risk (e.g., financing training courses), as the rate of return, which is measured by the ratio of profit achieved thanks to employees being the subject of development projects, to the value of the expenditure necessary to achieve it, is always unknown (Becker, 2002, p. 14). Furthermore, investment in employees' development is associated with leaving of employees who were the subject of investment. Despite these threats, not investing in human capital may lead not only to the loss of additional benefits, but also to the decrease in qualification of personnel, who will not be able to achieve the goal set by the company (Brand-Noé, Schwager, 2001, p. 166).

Incentive risk in the service sector is related to the fact that employers with specific human resources cannot be definitively sure of the benefits possible to be achieved thanks to these resources. One reason for that is e.g. the inability to accurately determine *a priori* the value of all the results of the work performed by employees, as well as the effects of actions taken against them, including the results of the adopted incentive methods. Incentive risk may result not only from the company's activities, but also from employees' behaviours. It concerns the risk of losing key company skills due to the turnover of employees, who are difficult to replace because of their qualifications (Knaese, Probst, 2001, p. 36).

Summarizing the concept and partial types of personnel risk, it should be concluded that this risk is strongly associated with incentive activities. The failures incurred in this area automatically involve failures in other areas of human capital management in the enterprise. Improper motivation in the company:

- leads to failures in recruitment and selection processes (as specialists with the highest qualifications do not apply to the company),

– reduces the effectiveness of the company's activities (as employees are not motivated enough to develop and work with full commitment),
– negatively affects the loyalty of employees and contributes to the increase in staff turnover.

In case of incentive risk, the risked value (subject to risk) may take tangible (increased personnel costs, lower profit, loss of competitiveness) or intangible form (loss of good image, reputation), whereas the latter also has financial implications.

Satisfaction of employees as a result of inducement

Job satisfaction is a positive emotional state resulting from the evaluation of own work or experiences related to it (Woźniak, 2012, p. 52). It is also understood as positive attitudes and emotions of a person towards working environment and professional duties performed by them (Staples, Higgins, p. 215). Satisfaction is the resultant of the difference between what the employee receives at work and what they think they should receive.

Job satisfaction as a result of inducement is experienced when the value achieved by the employee as a result of work is equal to the expected value, because of which the work was undertaken. Therefore, it depends on the balance between what a person invests in a performed work (e.g., time, involvement) and what they receive in return (promotion, remuneration, opportunity for development, peer relations). Lack of satisfaction occurs when serious employee involvement is rewarded with small benefit.

Satisfaction at a work place is related to the possibility of meeting needs, aims, values and beliefs by an employee (Bartkowiak, 2009, p. 116). Such possibility of realizing one's values and goals is perceived as the basis for shaping the employee's attitude towards their work. V.H. Vroom believed that a positive attitude towards work equals job satisfaction, which is contingent on fulfilling the expectations of the employee (Vroom, 1964, p. 99). He assumed that employee satisfaction results from:

– the value of the expected reward,
– effort put to achieve the desired result,
– perception of the subjective probability of success,
– evaluation of the validity of the reward received,
– comparison of rewards with social standards.

Further development of this concept could be found in works by E.A. Locke, who indicates the following conditions work must fulfil to satisfy the employee (Locke, 1976, p. 1328; Springer, 2011, p. 164):

– work is an intellectual challenge for an employee that they can deal with,
– alignment of own goals with the company's goals,
– lack of excessive physical overload (work tailored to an employee's ability),
– fair remuneration adequate to individual aspirations,
– physical working conditions that allow achieving goals and are in line with the needs of an employee,
– respecting other employees of the organization,
– support in combining individual and professional goals, minimizing conflict and ambiguity of roles.

According to E.A. Locke, job satisfaction is the result of appraisal of one's work, which makes it possible to achieve important values from job, provided that they are in line with basic human needs or help to achieve them.

In today's companies, there is general recognition that care for employee satisfaction will also translate into positive behaviour expected by the employer, i.e. low absenteeism, commitment to work and loyalty. Whereas, a decrease in satisfaction will significantly increase the risk of unfavourable phenomena.

The results of the research conducted so far confirm that the lack of job satisfaction is associated with:

- higher absenteeism rates (Dwyer, Ganster, 1991, pp. 609–620),
- greater turnover of employees (Jenkins, 1993, pp. 83–91),
- reduced quality of services provided by the company (Malhotra, Mukherjee, 2004, pp. 162–174).

When managing job satisfaction and reducing personnel risk, of great importance are incentive activities undertaken by a service company.

Importance of incentive activities in the reduction of personnel risk

There are two entities that take part in the motivation process, i.e., an employee (motivated) and a superior (motivating). An element connecting them is a relationship whose type and effect depend on both the superior and the employee, with each side having an impact on the success of the process (Pietroń-Pyszczek, 2005, p. 497).

It is very difficult to achieve agreement between an employee and an employer as to undertaken incentive activities. On the one hand, an employer expects the employee to be committed and responsible for the tasks entrusted to them and to use all their skills at work. On the other, an employee can expect the employer to appreciate their involvement and provide them with adequate remuneration (in the form of tangible or intangible incentives).

Properly carried out incentive activities in a service company should meet financial, psychological and social needs of employees. Incentives used in service companies should complement each other, as a properly constructed motivational system should lead to a synergy effect, where the effectiveness of the entire system is greater than the sum of the effectiveness of its individual components.

Selected incentive tools ensure the appropriate level of involvement of employees, which affects the effectiveness of individual activities, work of the entire team, and in consequence, also the results achieved by a service company. Such tools constitute the following incentives:

a) financial:
   - ownership (employee shares, profit-sharing),
   - earnings (remuneration, bonuses, service premium, financial bonuses);

b) non-financial:
   - tangible (medical care, insurance, retirement insurance, telephone/computer/company car, social benefits, training courses),
   - intangible (praise, possibility of promotion, work comfort, job security).

Financial incentives include basic salary, bonuses, rewards, and possible functional allowances, commissions. A special role in binding an employee to a company is attributed to shares and stocks, as they provide long-lasting loyalty. These are deferred income, whose value depends on company's market value. Of special importance are also financial service packages, and preferential loans through which the company tries to support employees in meeting their needs.

When designing remuneration system, it is important to pay attention to whether components of remuneration and remuneration policies are tailored to the needs of the employees and the employer (a service company). In remuneration management, there can be observed a trend to liberalize salaries and introduce cafeteria plans

of remuneration, which allow an employee to individually compose a set of additional non-financial benefits. The introduction of an effective system of additional incentives to an enterprise requires, however, achieving an adequate level of satisfaction with the remuneration received so far by employees.

Non-financial benefits may be of tangible character (e.g., a cell phone, medical cares) or intangible (career planning, organizational climate, prestige of the profession, recognition by the team and company's management, autonomy in the implementation of tasks, general image of the enterprise). Non-financial incentives shape employee awareness, their attitude towards work and supervisors, as well as mutual relationships. They encourage employees to take on more ambitious tasks, increase productivity and quality of work, abandon the attitude of passivity and assurance, and become committed and willing to cooperate.

Implementation of a system that includes on wider scale non-financial incentives requires from a service company's CEO to act systematically and be more diligent, as well as truly respect employees and invest in organizational human capital.

Undoubtedly, the advantage of non-financial solution is that a budget necessary for their implementation is lower than the one planned to be spent on remuneration. Therefore, it is possible to, in a less costly manner, affect self-esteem, increase loyalty, and strengthen identification of employees with a service company. Moreover, non-financial incentives support financial incentives in generating long-term relationships with employees based on mutual trust and benefits. One of the best investments is to foster attachment of qualified employees to a service company. It especially important in the era of fierce competition, where on the one hand, it is difficult to acquire competent employees on the market, and on the other, training new employees is a long-term process that will take time before they reach (sometimes after many months or even years) a skill level that is satisfying for a service company.

The result of properly chosen incentives is job satisfaction experienced by employees (Harris, Mowen, Brown, 2005, pp. 19–35). Great concern for employee satisfaction results in tangible benefits for a service company, such as:

- great involvement of employees in the performance of duties (high quality of services; strengthening of the company's market position),
- loyalty of employees (low employee turnover),
- a positive image of a service company as an employer.

The level of employee commitment is a consequence of exchange of benefits between them and a service company. Therefore, effective motivation of employees requires conclusion of a psychological contract in a company, which includes two components: transactional and relational that interact with one another (Guzzo, Noonan, 1994, pp. 447–462). In return for the effective involvement of employees in the provision of services, a service company should:

- ensure a sense of security,
- invest in their development,
- fairly appreciate their contribution,
- create conditions in which work will be a challenge and pleasure, and employees will be aware that their contribution is important for the organization.

The possible disturbance of transactional agreement balance causes a disturbance in relations, which, in turn, negatively affects the involvement of employees, who are one of the main stakeholders

of a service company, i.e. people who influence its activities, benefit from the company's success, and bear the consequences of failures and errors.

Classical incentive schemes refer to external stimulus factors, such as: higher salaries, promotions, and better working environment conditions. Today, in many cases, there can be observed a crisis in this sphere, as instead of comprehensively motivating, they discourage to develop, block initiative, eliminate enthusiasm, weaken organizational culture, etc. External goal orientation is so strong that it suppresses internal motivation, work becomes only an obligation, psychological withdrawal of the employee and burnout take place, and thus professional activity is hindered. Extrinsic incentives are caused by factors related to the job environment and conditions, whereas intrinsic incentives are triggered by factors resulting from the work itself and the achieved professional successes. Each of these groups of factors has a different impact on engagement. F.W. Herzberg, not without reason, described external factors as "hygiene factors" – important, but not decisive for employee involvement. He also noticed that extrinsic factors are very often the source of lack of job motivation, due to absence of satisfaction, or cause neutral, indifferent state (Herzberg, 2006, p. 9).

The process of motivating employees in service companies should therefore consist of two phases. In the first one, the so-called hygiene factors, i.e. safe work, satisfying salary, appropriate interpersonal relationships and acceptable managerial style, should be provided. However, this is enough to only eliminate dissatisfaction. In order to obtain the employee's true involvement, intrinsic factors leading to job satisfaction should be used by enriching the content of the work, expressing recognition, and creating career perspectives. Although extrinsic factors may have an immediate impact on employee behaviour, their impact does not have to be long-term. On the other hand, intrinsic factors have a profound and long-lasting impact on employee behaviour. Both types of factors are equally important in the scope of satisfying a wide range of employees' needs. Therefore, achieving effective engagement requires finding the right balance between extrinsic incentives (salary increases, promotions, rewards) and intrinsic incentives, such as increased independence, development opportunities, sense of achievement, and various forms of participation.

Due to the fact that employee expectations change, whereas incentive system rules are formalized and naturally unvarying, it is necessary to systematically verify incentive activities related to identification of occurring irregularities.

Conclusions

All decisions concerning the motivation process are subject to risk, which is most often related to the lack or invalid evaluation of the level of satisfaction of individual employee needs. In this context, it is important to minimize negative consequences of the lack of coherence in personnel activities in the area of motivation, by creating a coherent system of financial and non-financial incentives directing the behaviour of subordinates. In order to reduce incentive risk, it is necessary to constantly carry out diagnoses in this area, since the hierarchy of incentives for individual employees may be different. Therefore, service companies should:

- set individual procedures for assessing the effectiveness of the motivation process,
- identify dysfunctions of the motivation process, using the results of periodic assessments of personnel,
- carry out a systematic analysis of employees' expectations and aspirations.

Only by recognizing employees' needs and tailoring to them incentive methods, can an employer effectively manage their subordinate staff. The response will be an increase in employee involvement in the process

of performing tasks. Such an approach will allow service entrepreneurs to reduce personnel risk and provide a chance to achieve market success.

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AUTHORITY–CITIZEN RELATION IN THE ASPECT OF THE DEVELOPMENT OF E-ADMINISTRATION

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KEYWORDS Internet communication, e-administration, virtual community

ABSTRACT

The growing ICT awareness and growing equipment in the information and communication tools of the society are conducive to and at the same time force the development of e-administration. In communication on the authority-citizen line, the ICT system is increasingly being used as the basis for the development of e-administration. Along with the further development of the Internet, this form of communication will become widespread and will undergo intensification. The article is a theoretical review and may encourage further research and reflection. Presents the analysis of the importance of Internet communication for the development of e-administration. The purpose of the article is to indicate that the new quality in access to information on public matters means that it is becoming faster and more common. New technologies contribute to its creation, which should be perceived as a tool for the transformation of administration and the way public services are provided, and thus the new way of communicating with the society. This paper, therefore, indicates the importance of communication in the authority-citizen and citizen-authority relation for the development of public e-administration. In addition, it was emphasized that proper communication of administration with citizens is considered as a factor that will determine interest in, and thus the development of e-administration.

Introduction

New technologies mean that e-administration can be perceived as an element serving the creation of additional public value. Their intensive development, and in particular the development of the Internet, contributed to the emergence of a new approach in communication on the state-citizens line and to the introduction of new solutions, models and services in this area through electronic public administration.

Literature review

The process of building both the information society and the e-administration itself is based, among others, on creating a proper ICT infrastructure that is helpful in the development of the content and system of e-services. Therefore, one of the main conditions for the implementation of e-administration is access to the Internet and its widespread reach (Garson, 2005, p. 27; Luterek, 2010, p. 12). Over the past five years, a dynamic increase in the number of Internet users has been observed from 35 to 53% for the global population. Currently, the Internet is used by over 4 billion people, on average using it for 6 hours a day (*Digital…*, 2018, p. 7). Development in this area results in better remote communication possibilities, at the same time leading to the interpenetration of technologies and services that so far have been usually treated separately (Boni, 2009, p. 146; Program, 2013, p. 11).

In Poland, according to previous forecasts, the number of Internet users in 2020 should be around 18–27 million (depending on the scenario adopted; Deloitte, 2012), but as data from early 2018 shows, the current Internet penetration is already at 78%, which means that 29.75 million people in Poland use the Internet, and, as research shows, they devote 5 hours 55 minutes per day to it (*Digital…*, 2018, p. 39). The increasing use of the Internet in everyday life contributes to the creation of an innovative e-economy, the shape of which will be influenced by the development of the government's strategy in the area of public administration e-services, implemented for the needs of business and citizens (*Analiza…*, p. 5). This clearly determines the increase in the use of the Internet as a stimulant of further development of internetization of public administration (*Cyfrowa…*, 2013, p. 19).

As recent years show, the rapid development of information technologies leads to a change in the manner and forms of communication, ultimately also affecting the manner and form of providing public services. C.M. Olszak and E. Ziemba are right in their view that the development of the information society is not possible without an efficiently functioning public administration. In addition to improving services, information and communication technologies lead to improved transparency and efficiency of information processes and management, which facilitates planning processes and administrative decision making (Olszak, Ziemba, p. 104). It is also assumed that the basic task of the state in the process of computerization and building of Digital Poland is to support the creation of a proper ICT infrastructure, which is the basis for the development of electronic administration. This is to be achieved by providing universal access to broadband services and creating an efficient infrastructure in the perspective of the next 12 years using the latest information technologies (*Polska 2030…*, 2012, pp. 100–101). It can be assumed that ICT shape the development of public e-administration allowing for different methods of communication and provide mobile access to and delocalization of services offered. Thanks to them, serving disabled persons is also easier (*Program…*, 2013, p. 65).

In a modern state, based on the use of new technologies, including the Internet, quick access to information is an indispensable element of citizen's life and a basic service provided to local communities (*Strategia…*, 2006, p. 60). More and more, communities are demanding simple, fast, remote communication and the possibility to handle their matters using the ICT infrastructure (Społeczeństwo, p. 115; Diagnoza, p. 27). The improvement of the quality of life in the era of the modern world is to a large extent conditioned by the use of information and communication technologies that serve to improve this communication (Hughes et all., 2009, p. 30).

By implementing solutions in the area of e-administration, access to communication between the authorities and citizens becomes easier, and the result of the development of communication with the use of ICT tools is better quality of and tailoring the offer to the consumer's needs, an increase in work efficiency, reduced production costs, and the emergence of new products. Therefore, we should strive to increase access to the Internet and create

more favorable system conditions for investment in ICT. As public e-administration develops, the range of services offered in contacts with communities via electronic data carriers is growing (*Strategia…*, 2006, p. 23).

With the evolution of the use of new technologies, it was observed that virtual communities began to be created. They allow communities to freely exchange views and opinions, thanks to which it is possible to create diverse groups of users with common interests. This virtual community according to M. Castells is generally organized around shared interests or goals (Castells, 2008, p. 362). Virtual communities are created by groups connected by a common interest, but separated by distance (Pańkowska, Sroka, 2002, p. 73). According to W. Chmielarz's definition virtual communities are "social groups gathering in the global network, distinguished according to the criterion of common interests, aspirations, desires, intuitions and needs in the implementation of a specific goal (it can also be an exchange of opinions or a community of views)" (Chmielarz, 2007, p. 271).

Method

The paper is of a theoretical review nature and may encourage further scientific research and reflection. It presents the analysis of the importance of Internet communication for the development of e-administration. The author indicates the role of information and communication technologies in creating a new type of communication on the authority-citizen line. The method used in the work was the analysis of literature and the analysis of content. The author reviewed available publications covering national and foreign literature on the subject, as well as reports and analyses in the field of public e-administration, as well as documents of a legislative nature.

Results

Due to the increasing access to the Internet, it is assumed that its users will more and more often create virtual groups, uniform in terms of interests, needs, lifestyles, regardless of where they are physically located (Gregor, Stawiszyński, 2002, p. 64). This will be an opportunity to strengthen ties in local communities. The awareness of citizens that they can actually influence the fate of the country and the awareness of freedom in dealing with local communities should theoretically contribute to their active participation in the creation of electronic administration. This should happen because virtual communities are also seen as tools for the development of local democracy. It is argued that discussion forums are an element that sustains the development of civic associations. With regard to public administration, such communication space as the forum allows for the communication of many people, where public affairs can be discussed in public. Virtual communities help citizens learn about public affairs and create centers of political power independent of the central authority. Through virtual communities they can assemble into unions and associations, also in order to speak on public matters. Thanks to the Internet, it becomes possible to transfer the possession of information into citizens' hands, resulting in more effective participation of citizens in public life (Pańkowska, Sroka, 2002, p. 72).

The development of virtual communities may include supporting the development of local budget organizations, interpersonal communication of residents and improving the provision of social services. They also help to create links between the local communities' on-line information services to share knowledge and experience.

At the local self-government level, social communication should provide information to the local community about the activities of commune authorities and of people from the outside of the commune, which means that it should be conducted in an open manner. This is why more and more often the potential of Internet communication is also seen by the self-government authorities themselves, using this channel to inform residents about their

actions, as well as seeking their opinions. The conscious information policy of local self-government authorities involves proper communication with the environment in order to achieve strategic development goals by obtaining active social support and creating a positive image of the commune. In order to achieve this goal, residents should be involved in the decision-making process. This goal can be achieved through (Sakowicz, 2002, p. 45; Augustyn, Dębowski, 2003, p. 156):

- informing – authorities disseminate information and allow citizens' passive access to information,
- consultation – in the form of a bilateral relationship in which citizens express their opinions and establish a dialogue with those in power,
- active participation – a partnership arrangement, where citizens also take part in the decision-making process, but the responsibility for final decisions and the implementation of the relevant program lies with the authorities.

These goals become easier to implement thanks to modern ICT technologies that can be used by administrative authorities today.

It is true that citizens' trust in the authority is often a prerequisite for introducing various programs and ventures that are innovations, especially on a local scale. Thanks to a properly conducted information policy, it is possible to gain public trust in the authorities. Thus, it can be generally assumed that proper communication between the administration and citizens is considered as a factor that will determine interest in and, hence, the development of e-administration. The more so because the region is more and more often perceived as the source of information, skills and innovation, as an environment reducing uncertainty and risk. It is expected to use the so-called bottom-up, endogenous development factors in local development, leading to the fact that in general the information society is becoming an inherent feature of regional development, including local development (Richter-Kaźmierska, 2008, p. 276).

It should also be noted that further development of the information society is to give the possibility of offering electronic administrative services, therefore it is important to care for digital education, because the increase in the advancement of a number of applications used in electronic administration may result in digital illiteracy, which leads to social exclusion. In order to counteract it, the activation of older persons and the equalization of differences between rural and urban areas are needed in particular. On the other hand, on the administration side conducting employee training is an important element; it should be obligatory in the situation when new systems for the provision of electronic services in the field of e-administration are being implemented.

The process of implementing public e-administration is an instrument to improve the provision of services, it is also the foundation of public governance that involves citizens in public life. In essence, it assumes providing citizens and enterprises with a broad offer of public services via the Internet, which affects serving the community and thus improves communication between entities. It can therefore be assumed that in order for the communication between citizens and the administration in its virtual aspect to affect the latter in its development it should:

- be oriented towards the needs of citizens and entrepreneurs and provide them with high quality services,
- act on the basis of unambiguous and transparent organizational and legal regulations,
- provide universal access, in particular to the provision of public e-services,
- be integrated with the systems of other offices to be able to provide comprehensive services to its clients.

User orientation involves the construction of electronic services serving the user, ones that meet their needs, predispositions and take into account their behavior patterns. The key role in constructing guidelines to

the creation of an adequate information system should be played by the possibility of proper communication and ensuring efficient service to the local community, which e-administration does in its scope, allowing quicker conduct of internal processes, handling administrative matters and citizens' immediate contact with the authority without having to travel.

As an example of such solutions, we can refer to the concept of "one-stop-shop". Due to the fact that the main area of local government self-government activities includes improvement of communication with authorities at all levels, acceleration of official settlement procedures and, above all, seeking integration of e-services provided to citizens and enterprises by administration units, it is necessary to create the possibility carrying out the work carried out by the client from the beginning to the end, in one place. This concept is called "one-stop-shop".

In Poland should be helpful in its implementation to fully use the planned functionalities of the ePUAP platform, regional platforms, as well as to integrate e-public services provided through thematic platforms. The introduction of this concept will help improve the efficiency of local government self-government by implementing a new type of e-services.

Conclusions

The development of the information society enforces changes in the traditional approach to administration. Dynamic development, the spread of the use of information and communication technologies and growing ICT awareness will stimulate further growth of the importance of e-administration. Expanding communication with an additional channel, that is the Internet, improves the efficiency of service for the community by introducing enhancements, generating real changes in service that both are beneficial for the community and affect the rise in the quality of the authority's functioning. The scope of changes, including organizational ones, has an impact on the communication of administration with citizens. They affect the relations between public administration bodies and entrepreneurs, citizens or other administrative units.

What is important, e-administration does not only help in creating the very interface between citizens and public administration using information and communication technologies, but above all it builds relationships between them and influences the change in the administration's philosophy, ultimately focusing it on the citizen.

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CAPACITY OF THE TOURISM AND THE ROLE OF CREATIVE INDUSTRIES – PERCEPTION OF VISITORS, BARRIERS AND MOTIVATION

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Abstract The aim of this paper is to present the impact of cross-border aspects and role of creative industry on the tourists' perception as a demand side of the markets in the region of Szczecin Lagoon. Tourism Carrying Capacity should be understood as a tool supporting process of the tourism management aiming at creating regional strategic documents in the end, creative industries are the engine of change and attraction for tourists.

Introduction

The aim of this paper is to present the impact of cross-border aspects and role of creative industry on the tourists' perception as a demand side of the markets in the region of Szczecin Lagoon. Nowadays there are areas that are particularly important and associated with the evolution of the economy and knowledge-based society. The term "creative industries" is not only one of the today's buzz words but is an integral part of the structure

of regional economy. Located at the interface of culture and economy, the creative industries in the 21st century evoke positive effects in the areas of business, technology, and society and is a driving force for creative regions. Talking about economic growth the sustainability has to be in focus. Sustainability in tourism as an economical factor in the regional development is defined by the capacity of the region as a destination. The tourism capacity of regions depends on several aspects and should not be taken into consideration only as a capacity defined by environment but should be discussed in a much wider context. As a starting point for discussion, the author of the article takes the definition of a sustainable tourism of the WTO that says that tourism capacity is: „The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction" (WTO, 1981; PAP/RAC, 1997). Thus, the sustainable tourism should be discussed taking into consideration three components as main pillars: physical-ecological component, socio-demographic component and political-economic component. All those elements are the fields where facts and subjective perception of stakeholders and visitors meet. The article focuses on the Szczecin Lagoon as a cross-border area and presents a perception of the visitors of the region as a one integrated German-Polish destination. As a core element, the barriers and motivation of the visitors to visit both parts of the region are presented and discussed. The survey was done separately for both sides of the Szczecin Lagoon and results from the German and Polish areas were compared. Authors analysed the potential determining factors that could influence the decision of the tourists to visit both parts of the region. The survey presents not only infrastructural or economical aspects determining positive or negative decision to share the time spent by visitors in the Szczecin Lagoon on both sides (German and Polish) but also so called soft factors like cultural heterogeneity or events having impact on the attractiveness of the region as an integrated tourism destination.

Literature review

The concept of the Tourism Carrying Capacity should be understood as a tool supporting process of the tourism management aiming at creating regional strategic documents in the end. The definition-assessment and implementation of TCC needs to be considered as a process within a planning process for tourism development and should not be treated as a fixed framework. The World Tourism Organisation defines the Carrying Capacity in tourism as „The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction" (PAP/RAC, 1997).

Already in the beginning of 80's started the dialog initiated by international organisations (like e.g. World Tourism and Travel Council (WTTC), International Federation of Operators, (IFTO)) bringing on the scientific agenda the sustainable development with the environmental protection in its centre. Additionally, the possibility of the measurement of the regional tourism capacity became a second important aspect of the discussion. Because of the focus on physical-environmental elements in the first step, the maximal capacity of the tourism was defined only by those aspects. In the second development phase of the TCC concept, social and economic aspects were taken into consideration. Talking about the sustainable tourism, Briassoulis (2002) and Robinson (2000) show specific relation between human activity and natural resources on the one hand. On the other hand, the tourism activities imply interaction and conflicts (see Figure 1) between two or more interest groups among the local community and tourists (one or more groups of tourists).

		Residents	
		good	bad
Tourists	good	Symbolic coexistence (Lichen model)	Conflict coexistence with adverse selection
	bad	Conflict coexistence with crowding out effect	Entropic coexistence (Locus model)

Figure 1. Qualitative matrix of the communities' interaction

Source: Bimonte, Punzo (2007), p. 81.

As a consequence, tourism sustainability depends on quality of resources in a broad meaning, including also such aspects like human, environmental, cultural and artistic heritage (Bimonte, Punzo, 2007). The interaction of all those elements as a profile of the tourism destination is often overlooked and do not considered as factors influencing carrying capacity on the demand side. Therefore, the supply side from the perspective of the region and its direct and indirect benefits should be taken into consideration. Thus, an upper and a lowerlimit of TCC can be of more use than a fixed value. TCC assessment should provide notonly the maximum but also the minimum level of development that is the lowest level necessary for sustaining local communities. It means than that the level of tourism development between both breaking points (max. and min.) is the development intensity that has a positive impact on both: supply side (socioeconomic situation in the region) and demand side (satisfaction degree of tourists as customers).

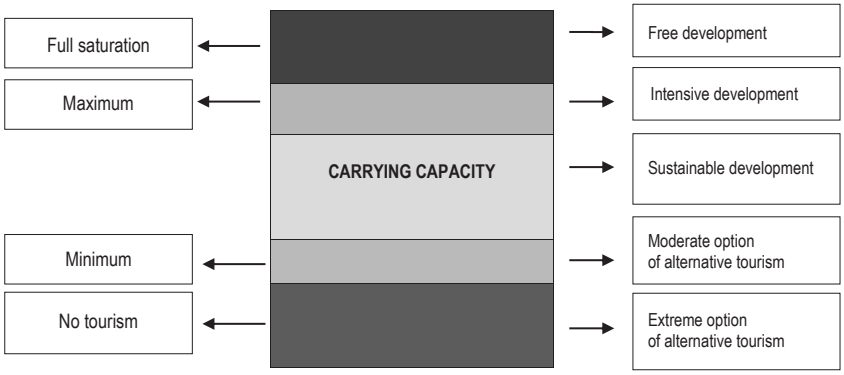


Figure 2. Scheme of the relationship between alternative development level of tourism (scenarios) and carrying capacity

Source: PAP/RAC (1997), p. 27.

As a TCC concept defines carrying capacity as a process, even when this is achieved, this limit does not necessarily obey to objectively, unchangeable, everlasting criteria (Coccossis, Mexa, 2002). To summarise, TCC concept supports decision-making processes in the regional development by defining bottlenecks in the

socioeconomic structure of the region. Additionally, recommends solutions based on cost-benefits analysis of reduction of negative impact of single elements in the regional framework.

Creative industries are becoming increasingly important components of modern post – industrial knowledge based economies. Not only they are thought to make higher then average growth and job creation, but also to be vehicles of cultural identity that play an important role in fostering cultural diversity.

According to the UNESCO definition the term creative industries refers to these organizations which combine the creation, production and commercialization of creative contents. UNESCO in 1986 has made the framework that was subsequently adopted by various national institutions which then adapted and modified the methodology to reflect the specific cultural realities of their country. The FCS defines ten distinct categories: (0) cultural heritage; (1) printed matter and literature; (2 & 3) music and the performing arts; (4) visual arts; (5 & 6) audiovisual media (5 cinema and photography; 6 radio and television); (7) socio cultural activities; (8) sports and games; (9) environment and nature.

The framework also proposes cross-category matrices such as creation/production, transmission/ dissemination, consumption, registration/protection and participation.

In Poland, the best-known definition of the creative industries is the British definition created by Department for Culture, Media and Sport that says, "creative industries are those industries 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" (DCMS 2001, p. 4). The current DCMS definition recognises eleven *creative sectors*. They are:

- advertising,
- architecture,
- arts and antique markets,
- crafts,
- design,
- designer fashion,
- film, video and photography,
- software, computer games and electronic publishing,
- music and the visual and performing arts,
- publishing,
- television,
- radio (DCMS, 2006).

The adjunct sector for the creative one is the cultural sector that has a real impact on the tourism. Cultural industries include industries that focus on heritage, museums and libraries, sports and outdoor activities, and a variety of 'way of life' activities that probably range is from local pet shows to a host of hobbyist concerns. In Germany both sectors are known as a Kulturwirtshaft**.** Both industries are created by creative class, the term created by Florida. Florida says that creative class consists of:

1. Super creative core – according to Florida, the wider range of disciplines from scientists, engineers, computer programmers, researchers, as well as those involved in art, design and media. "It consists of both the scientists and engineers, academics, poets and architects, as well as people who care about

design, education, art, music and entertainment, whose economic function is to create new ideas, new technologies and/or creative content."

2. Creative professionals – other workers using knowledge (knowledge intensive Employees). They are workers with thorough preparation of the scientific community working in sectors such as health care, business, finance, law and education, justice and governance. "They solve specific problems based on advanced skills"; acquired in the course of higher education.

Szczecin is one of the oldest and biggest cities in Poland – 3rd place in terms of occupied area and 7th in terms of population. The city is the centre of agglomeration of Szczecin, a network of surrounding municipalities. According to data from 30 June 2016, the city had 405,413 inhabitants. After the second World War, almost 100% of the area was settled by the new population, derived mainly from the typically rural, culturally backward areas. The settlers felt the double strangeness of the new environment: the civilization, because they found enormous differences between the infrastructure of modern cities and the underdevelopment and backwardness villages, and cultural, as these cities, despite the intensive propaganda of communist regime, had little in common with Polish culture (Kubicki, 2010).Rapid and profound changes in the last two decades, happening both in the micro- and macro-scale, make that we can observe the processes of "boom" of cities, creating a strong foundation for the development of the middle class and urban culture. The change of the system in 1989 laid the foundations for economic and legal framework for the development of the middle class, which means that it is de facto an urban middle class, which recruits mainly from the second and third generations of post war migration, the first decades of generations that can inherit the financial capital stable and predictable reality. The research of Paweł Kubicki from "Instytut Obywatelski" shows the poor condition and lack of development of the Szczecin city. Although Szczecin has a big potential of creative class and creative institutions, cannot as yet find itself in the new reality. The city is in a crisis yet failed to create the foundations for the development of new post ford economy, which could minimize the effects of the collapse of traditional industries. The key problems are lack of public spaces and the weakness of cultural institutions.

On the other hand, the quantitative research "Kultura w Szczecinie; Różnorodność, Aktywność, Wielobiegowość", which took into account the creative industry and was conducted in the city in 2010, indicates that Szczecin is a city of great creative potential. It says that Szczecin is in the process of identification and rapid development. Taking into consideration recent years, the development of cultural activities in Szczecin was in many ways faster and more intense than in other Polish cities as Kraków, Wrocław or Poznań, which are traditionally identified with culture.

So, at what point of creative industries' development is the city of Szczecin nowadays? Is the creative sector likely to become a driving force for this city? Does Szczecin meet the basic conditions reported by Florida on that topic to attract the creative class? What is the role of the soft factors such as cultural heritage, ethnic diversity, tolerance, attractive places to live, a sense of security in the development of the city?

Method

The process of defining TCC is composed of two parts (it follows in principle the conceptual framework for TCC as described by Shelby and Heberlein, 1986).

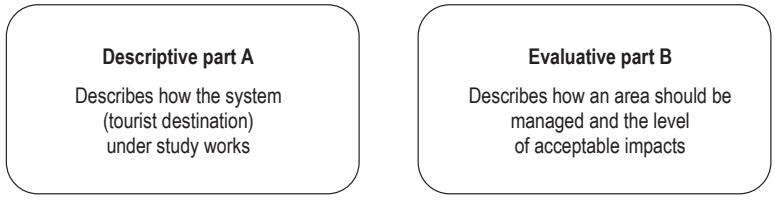


Figure 3. Two parts of defining TCC

Source: Shelby, Heberlein (1986) in Coccossis, Mexa (2002).

Part A describes the system, how it works taking into consideration broad aspects of the sustainability aspects and barriers (bottlenecks, constrains etc.). Part B on the other hand presents how the region should be managed, based on the preferable level and kind of the tourism activities in the region. The whole process of the tourism planning process based on the both parts is presented by Figure 4**.** The authors focus in this article on the narrow part of the whole process taking into consideration aspects playing crucial role as attractors and obstacles for customers to visit both parts (Polish and German) of the Szczecin Lagoon.

Methodological assumptions of the research relate to the Szczecin's Lagoon area. The Lagoon is an inland water basin found in the south-western part of the Baltic Sea. It is shared by Germany and Poland. These are the towns that can be found at the Szczecin Lagoon: Świnoujście, Ueckermünde, Wolin (town) and Nowe Warpno. For the needs of research also city of Szczecin is included. Szczecin as a biggest city in the region can be the touristic attraction, as well as a centre of the creative/culture industries. The survey was done in August 2017 in the Szczecin Lagoon region on both sides – Polish and German. Altogether 246 persons spending their holidays were interviewed. For the interview, the standardised questionnaire was used to ensure comparability of the survey results. The questionnaire was prepared in Polish and German language and was presented to the tourists in their national languages.

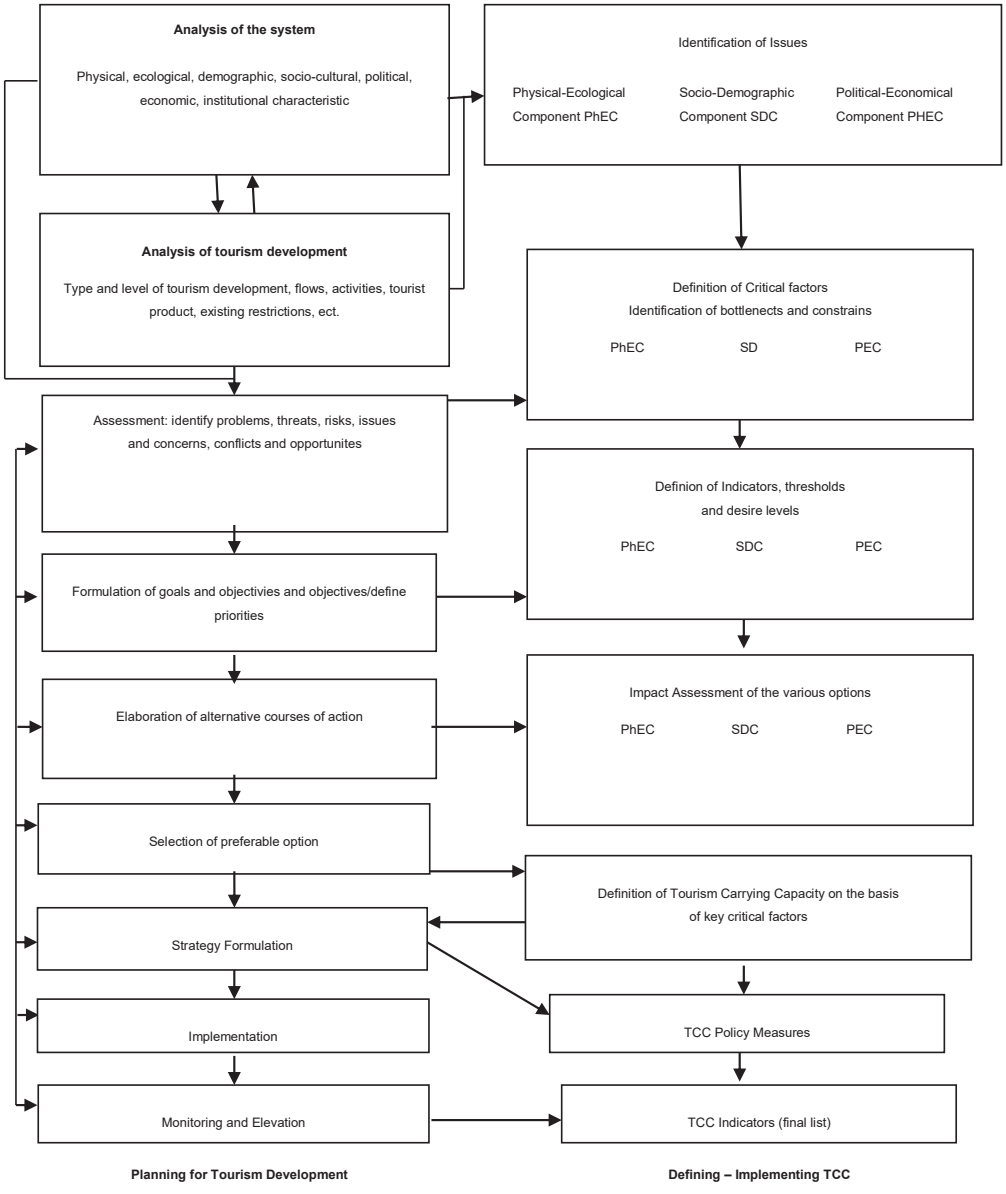


Figure 4. The main steps of a process which could be used to define (and implement) TCC

Source: Coccossis, Mexa (2002).

Results – The comparison of the motivation to visit other part of the region focusing on the creative industry aspects

The number of respondents defining the following aspects as strongly influencing their decision to visit the other part region (other country) as a tourism destination

As we can see at Figure 5 the strong and rather strong motivation among German tourists is higher in 5 out of 6 aspects. Tourists at the German side are motivated by both market differences like prices and different products, but also by curiosity about landscape and cultural attractions. The highest mentioned motivator by German tourists is the curiosity of the landscape and natural heritage 24%, among Poles it is one of the lowest, because 5% of Poles chose this aspect as a motivating one. Adding to this the interest of the German tourist in cultural offer and history (13% of German tourist pointed that), it gives us a picture of a very conscious tourist. The German tourist is also motivated by the purchase offer – 22% of the respondents chose this answer as a motivating one, and it was also the most frequently chosen indicator by Polish tourists – 13%. In general German tourists are much more motivated to visit polish side of the coast then Polish tourists the German side.

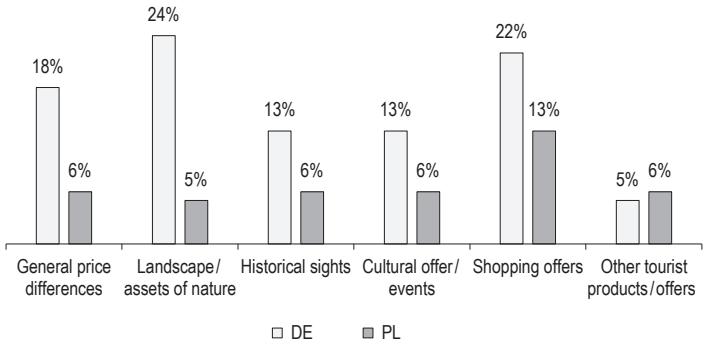


Figure 5. Motivation to go travel to neighbouring country

Source: own resources.

When tourist was asked about obstacles and barriers in travelling to other country the biggest difference between Poles and German was the price of the services offered (Figure 6) 40% of Polish respondents indicated this reason as the most serious in their decision to spend their holidays in a neighbouring country, with only 14% of respondents in Germany. It is worth noting that German tourists still perceive our country as attractive in terms of prices. The highest rate of 22% among German tourists is the lack of interest. German tourists do not have adequate knowledge and information about what to expect from the Polish side, so they do not even think about making travel decisions. Among Poles, this rate is also high, i.e. as much as 40%. It may be concluded that in order to deepen the knowledge and desire to visit the country of the neighbour, it is necessary to carry out information and promotion campaigns showing tourist and cultural attractions.

Among the Polish respondents, the indicator concerning the level of crime was the least frequently chosen. Polish tourists perceive the German coast as a peaceful and safe place to relax. Germany cited this factor as 16% and was the third highest after a lack of interest and language difficulties.

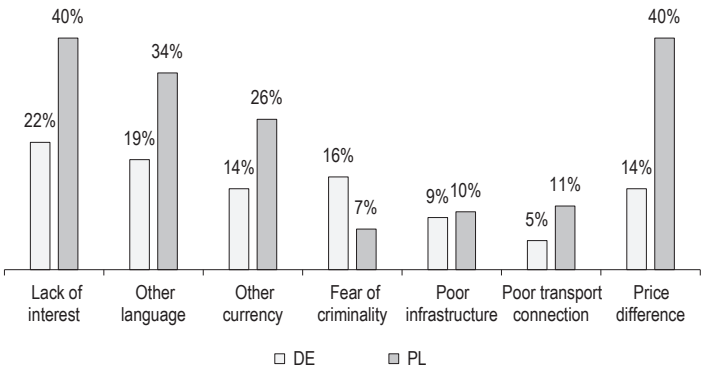


Figure 6. Obstacles in going to neighbouring country

Source: own recourse.

Conclusions

As the society has developed and was able to fulfill the basic needs for food and shelter they turned their attention to satisfaction of "higher order" needs, such as satisfaction and self-fulfillment. Scitovsky (1976) has described this development in terms of the shift from unskilled to skilled consumption, or from outer directed to inter directed consumption. Culture and tourism were two of the main growth industries in the 20th century, and the combination of both "cultural tourism" had become popular and profitable development option for regions and countries around the world. In 2007 cultural tourism accounted almost 360 mln international tourist, or 40% global tourism. In value terms the condition of cultural tourism is even greater, because cultural tourist is estimated to spend as much as one third more on average than another tourist. Nevertheless, the rapid growth of tourist has raised the questions about sustainability of this new form of mass tourism, because cultural mass tourism brought several negative impacts as overcrowding, environmental problems, degradation of local culture. It made regions start searching for new forms of articulation between culture and tourism, which can strengthen rather than water down regional culture. As trend appear that people don't want longer to concentrate on accumulating of goods, but rather there are keen to develop themselves doing creative things as drawing, painting, singing and doing yoga etc. – all these activities which build their own skills and develop their potential.

Ironically, skilled consumers know more about the experiences they are consuming then the people who supposed to supply them. 21st century is the time when travelers construct their own itineraries on the Internet; they no longer buy the packaged excursion, but creatively shape their own experiences, based on what, when and where they want to see. These experiences emphasize active involvement in local culture and creativity rather than the top lists of global culture. Creative tourism – the new forms of tourism are difficult for the traditional tourism sector to

deal with, but in case of not risking losing the clients; there are more opportunities in dealing with them than ignoring creative tourism.

According to Richard and Raymond: creative tourism is the one which offers visitors the opportunity to develop their creative potential through active participation in courses and learning experiences which are characteristic of the holiday destination where they are undertaken. Important implications:

Creative potential – the tourist is provided with tools to develop their own creative potential, and to take something more than souvenirs home with them.

Active involvement – tourists are actively involved in the creative process, and this involvement creates the potential for genuine exchange and engagement with local people and culture.

Characteristic experience – creativity can happen everywhere, but good thing is to link the creative process to destination, local culture and identity.

Co-creation – the concept of creative tourism implies a level of co-creation, co-makership between tourists and locals.

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BOOSTING INNOVATIVE ENTREPRENEURIAL ECOSYSTEM IN REGIONS FOR YOUNG ENTREPRENEURS – REGIONAL PERSPECTIVE OF ENTREPRENEURSHIP

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ABSTRACT

From 2016 till 2020 iEER project partners will learn from each other to build better services and regional policies in order to support startups. The project aims to break down silo mentality and bring together all actors having a hand in entrepreneurial success. Universities, local and regional authorities, entrepreneurship support organisations and SMEs are closely involved in the project both on the local and interregional levels. International studies on macro and micro level are conducted as well as analyses of the regional context of ecosystems supporting the entrepreneurship. Individual perspective of startups and small companies is taking to the account. The article describes practical aspects related to the support of the entrepreneurial ecosystem, which is an additional asset. The research method itself is a method of classical data analysis (desk research) and case studies, but the description of idea how to boost youth entrepreneurship and entrepreneurship ecosystem itself is a new approach. Results of the iEER project analyses are presented in article, as well as comparative study of Westpomerania Region to other regions in Europe.

Introduction

Boosting innovative Entrepreneurial Ecosystem in Regions for young entrepreneurs – iEER is an Interreg Europe funded flagship project bringing together 10 regions around Europe[1]. Initiated by a group of regions awarded with the European Entrepreneurial Region label (Committee of the Regions, 2016). The main goal of iEER is to define smart paths and solutions to boost regional entrepreneurship ecosystems supporting young entrepreneurs. iEER partner regions have a strong focus on entrepreneurship and the majority of project partners have been awarded with the European Entrepreneurial Region label (www.interregeurope.eu/ieer, 2017).

Method

iEER learning process is conducted during 2016–2018. The five Learning Camps are a key element of the project. During Learning Camps project partners study the best practices of a region and brainstorm in workshops to find solutions to common problems. Another central element of the project are ten Peer Reviews, one for each partner region. Peer reviews are design to provide valuable insight on the strengths and weaknesses of the region which will help develop local entrepreneurial ecosystems. After the learning process is concluded in 2018 project findings will be collected, analyzed and compiled into regional action plans, which will then be put into action. Key findings of the learning process will be shared with others through the iEER Boost Growth Handbook. The handbook gathers best practices and most useful policies into a practical guide to benefit other European regions. The second phase of the project sees iEER move from learning to implementation with the help of Structural Funds and other available local and EU funding (www.interregeurope.eu/discover-projects, 12.10.2017). During 2018–2020 regional action plans are put into practice and their progress is closely monitored. The results and lessons learned from the implementation of the action plans are collected into an EU-wide policy recommendation. Regional action plans, iEER Boost Growth Handbook and the policy recommendation are shared to provide others the chance to implement lessons learned. iEER works closely with the EU Committee of the Regions and European Commission DG Growth to make sure project results can be enjoyed by regions around Europe (iEER, 2017).

Results

Regional policies and strategies

Taking into account the current situation of the region and its economic development vision, in the upcoming years West Pomerania is likely to face a number of major challenges. The activities of regional authorities will focus on the development of smart specializations (Regional Development Strategy of Smart Specializations in the West Pomerania Region 2020+ RIS3, 2016). This is aimed at expanding the international cooperation and the internationalization of business activities, thus strengthening the competitive power of the region. Increasing the significance of West Pomerania in international markets is a particularly important aspect. It is expected that the smart specializations identified as high-potential areas will act as a magnet for newly established enterprises.

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The most important issues in the upcoming years will include strengthening and deepening inter-regional cooperation between the market entities concerned, which are aware of the need to exchange experiences and engage in new technological achievements. An equally important role in the economic specialization process is expected to be played by joint actions taken by universities and enterprises in the field of both teaching, and research and development.

In 2016 the West Pomerania authorities adopted the Regional Development Strategy of Smart Specializations in the West Pomerania Region. Nonetheless, based on the binding strategy, no initiatives addressed to enterprises are currently implemented in the region. The Marshal's Office of the Region is preparing a project of establishing and developing the regional innovation system to be launched by the end of 2016.

Two major modes of financing business development can be identified in region, i.e. instruments based on public resources, coming from both regional and European funds, and private resources coming from private investors or entrepreneurs' own resources. In the case of Polish and West Pomerania enterprises, it can be noted that, despite the relatively wide availability of EU funds, enterprises' own resources are still the prevailing source of financing innovations.

Business awareness among young people is gradually increasing, *inter alia*, due to searching for various forms of self-employment and finding a way around the problem of unemployment. The need to support entrepreneurship also appears to be increasingly recognized by administrative authorities in the region. This is also reflected in the development of numerous initiatives in the field of entrepreneurship and commercialization, both at higher education establishments and among non-governmental organizations. This proves how the entrepreneurship support eco-system is expanding in the West Pomerania Region. However, the synergy effect arising from the activities of various types of organizations is yet to become more pronounced. For many years political support has been offered by regional authorities for different initiatives promoting entrepreneurship development, also through numerous strategic documents (including the Regional Development Strategy of Smart Specializations in the West Pomerania Region 2020+). Especially important aspects for Region include supporting the R&D activities and transferring highly innovative and locally developed technologies. The region promotes best practices in the scope of technology through publications and events, including:

- the Information Bulletin of the Regional Operational Programme of the West Pomerania Region 2014–2020,
- the Economic Competition of the Marshal of the West Pomerania Region.

Support is also provided to various initiatives aimed at strengthening the regional economy, innovation and cooperation between the business and research sectors, through:

- business-business and business-science meetings,
- science-promoting events (e.g. the E(x)plory competition),
- training sessions and conferences.

Innovation support is envisaged in several strategic documents concerning the West Pomerania Region, including the Regional Operational Programme of the West Pomerania Region, the Regional Development Strategy of Smart Specializations in Region 2020+, and the Regional Development Strategy. These documents define a number of business support-oriented measures, such as loans, guarantees and support to investments, along with research, land preparation for investments, training sessions, fairs, promotion, consultancy, mentoring, coaching, etc.

This support is assumed to be mainly directed to enterprises, including SMEs introducing novel ideas to the market, and in particular in cooperation with R&D units and entities operating in the field of smart specializations.

Other entities which may apply for support for innovation development and implementation, as part of the innovation-oriented regional policy, include higher education establishments, organizations supporting entrepreneurship, credit and warranty funds, and incubators.

Structural funds

The currently implemented Regional Operational Programme of the West Pomerania Region promotes the establishing and development of new enterprises. One of the direct ways of supporting entrepreneurship, self-employment and creation of new jobs is to finance various consulting and training initiatives addressed to people willing to pursue such challenges. Information and publicity campaigns are conducted to promote the idea that it is never too late to commence business activity – you only need a good idea and determination.

The sum of over EUR 340,000,000 has been allocated for the economic sector development as part of the Regional Operational Programme 2014–2020. These resources will be rendered available as part of the First Priority Axis: Innovations – Modern Technologies, aimed at increasing the level of innovation and competition of the regional economy. The Regional Operational Programme is closely correlated with the RIS3 strategy. Therefore, the principal objective of the First Axis is to use the potential of smart specializations, including through increased activeness of enterprises in the field of research and development. The Programme offers support to enterprises at each development stage and is addressed to both companies (directly) and business support institutions (indirectly).

In addition, by hand of the bank-managed West Pomerania Fund of the Joint European Resources for Micro-to-Medium Enterprises (JEREMIE 2), financial instruments are introduced which support entrepreneurs at the initial stage. These instruments are implemented, *inter alia*, through the following actions: 1.17 Strengthening the process of supporting companies at the early development stage and 1.9 Investing in enterprises through financial instruments.

Financial resources will be allocated for supporting small and medium-sized enterprises, including start-ups, by providing them with financial instruments in the form of capital contributions, warranties, micro-loans, working capital loans, investment loans, loans for the implementation of R&D results, and loans for supporting self-employment and creating new jobs.

As part of Action 1.17, comprehensive incubation support has been envisaged, along with capital instruments, including the provision of new and specialized incubation services through consulting measures focused on advanced business planning, product/service marketing, sales process improvement, innovations, risk analysis and acceleration.

With a view to selecting the most promising projects to receive financial support, the Marshal's Office has launched a dedicated department in charge of assessing applications submitted as part of the Regional Operational Programme. At the subsequent stage, experts are engaged to assess the proposed projects before the final decision is made on their financing.

For many years West Pomerania has been invariably in the lead when it comes to regional entrepreneurship. The enterprise-oriented measures taken by the regional authorities are primarily aimed at developing the innovation-driven attitudes among entrepreneurs and increasing the degree of business-science cooperation.

As regards West Pomerania, the development of innovative economy appears of utmost importance, considering that the region is left behind in the innovation ratings. In the previous financial perspective, business support institutions, along with local-government bodies, have displayed a significant level of activeness in

developing soft support measures and infrastructure for young enterprises. The already implemented measures will soon be supplemented with other means of supporting entrepreneurship. A significant factor to determine the support provided to specific initiatives will be their correlation with the actual market demand.

Therefore, the support instruments as part of the new financial perspective for 2014–2020, within the Regional Operational Programme of the West Pomerania Region, have been mainly oriented towards increasing the level of innovation and competition of the region through smart specializations.

In addition, a sum of over PLN 50,000,000 has been allocated for start-ups financing as part of the JEREMIE initiative (with West Pomerania as the pioneering region). This support measure has provided entrepreneurs with access to a wide array of financial instruments on more favorable conditions. The significant level of flexibility, resulting from an extended withdrawal or settlement period, constitutes an unquestionable asset of this model of financing. The support provided is expected to open new financial opportunities to these enterprises, including especially micro- and small entities, which usually use their own resources to implement innovative solutions.

Entrepreneurial competence and mind-set activation

Essential aspects of supporting entrepreneurship in the West Pomerania Region include supporting entrepreneurial competences and fostering optimal approach to business orientation. As part of good practices in this field, activities undertaken by the Regional Centre for Innovation & Technology Transfer (RCIiTT) are certainly worth noting. The Regional Centre for Innovation & Technology Transfer operates within the West Pomeranian University of Technology in Szczecin which was established in 2009 by combining the Agricultural University and the Szczecin University of Technology. RCIiTT was set up in 2008 within the International Programmes Office operating since 1999.

RCIiTT conducts advisory and training activities addressed to enterprises, scientists, students and graduates, in the field of technology transfer, research and development financing, and support to academic entrepreneurship. An array of RCIiTT services are offered free of charge, using the funds provided by the European Commission and the Ministry of Science and Higher Education. The top quality of services is confirmed by the quality certificate ISO 9001:2008 (ZUT, 2017).

With a view to supporting entrepreneurial competencies and business orientation, RCIiTT also runs the Academic Business Incubator. It also deals with consultancy services concerning research and development, as well as legal scholarships, internships and vacancies, and provides information on the administrative and formal aspects of scientists' mobility.

Technopark Pomerania is another institution supporting entrepreneurial competences, and promoting entrepreneurial attitudes and business orientation. Technopark is a complex of facilities managed by the Szczecin Scientific and Technological Park which implements enterprise development support programmes, and also facilitates office rental and renders data centre services (Technopark Pomerania, 2017).

Startup and acceleration support

In terms of supporting entrepreneurship, the support for newly formed enterprises and start-ups, and business acceleration appear equally significant as training or advisory activities. However, at this stage the use of different tools and tailored problem-solving strategies seems indispensable. As part of good practices in this field, activities

undertaken by the Regional Centre for Innovation & Technology Transfer are again worth noting, in the context of the Academic Business Incubator run by this institution.

The services provided by the RCIiTT ABI are aimed at supporting entrepreneurs at the pre-incubation, incubation and acceleration stages (Inkubator Przedsiębiorczości, 2017). In the process of establishing start-up activities, and then in the course of acceleration and scaling, it is extremely important that appropriate infrastructure support and mentoring be provided. For this reason, ABIs also offer support in business modeling, identifying strengths and weaknesses, and analyzing business surrounding and competition. It also conducts training on financing, protection of intellectual property rights, and business internationalization.

Conclusions

While analyzing the activities of RCIiTT and Technopark, one can observe certain differences in the concept of supporting entrepreneurial competences and promoting entrepreneurial attitudes. These differences, however, make the two institutions complementary rather than competitive to each other. In the regional context, these are the most significant and dynamic institutions. Business support institutions and local-government units have displayed a significant level of activity in the field of expanding the incubation infrastructure for newly established enterprises and technological parks. Structural funds and other public resources have contributed to the emergence of new innovation support services in the market (Regional Development Strategy of Smart Specialisations in the Westpomerania Region 2020+ RIS3, 2016). The Regional Development Strategy of Smart Specializations in the West Pomerania Region 2020+ is a guidance document which also bears certain operational features, indicating the need to support young entrepreneurs, including through strengthening the human capital, improving the structure of business connections, fostering the cooperation between business support institutions, and developing scientific potential.

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POLISH ENTERPRISES AS BENEFICIARIES OF EU FUNDS FROM 2007 ONWARDS – AN ANALYSIS INCLUDING SECTORIAL AND REGIONAL DIFFERENTIATION

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ABSTRACT The article presents data concerning different statistical sections and populations of enterprises – beneficiaries of EU funds in Poland during the 2007–2013 and 2014–2020 programming periods. Information and data used were obtained from different databases maintained by the Polish Ministry of Economic Development and the Polish Central Statistical Office. Data analysed includes i.a. the size class of different entities, their regional implantation (seat of main business activity according to official registrars), the number of projects realized as well as their value, the NACE code of the beneficiary. The merger of two independent data sources allows for a more complex research as well as for a rudimentary data quality assessment. Results obtained point out several challenges concerning the data completeness. However further analysis is possible and deemed as needed. This is especially true in the case of the economic sectors receiving funding from different National and Regional Operational Programs.

Introduction

The following work presents an analysis of entrepreneurs and companies that have been beneficiaries of EU funds both from national and regional operating programs during two programming periods (2007–2013 and 2014–2020). The analysis does not include two funds: the European Maritime and Fisheries Fund as well as the European Agricultural Fund for Rural Development.

Data presented can be used to illustrate regional disparities between beneficiaries in terms of size class, NACE categories of EU funds beneficiaries.

Literature review

Polish enterprises as beneficiaries of European Union funds have been widely analysed and described by both academia as well as public institution – within the scope of the evaluation process. However authors do concentrate either on the regional dimension of beneficiaries or the effectiveness (or lack of thereof) of the different funds or schemes. Majors themes of theses analysis are included in the Table 1.

Table 1. Literature overview

Major theme (s)	Author (s)
Means and methods of interventions	Bentkowska, 2007; Mikołajczyk, Krawczyk, 2010; Błaszkiewicz, 2013; Geruzel-Dudzińska, 2016
Entrepreneurship	Czub, 2013; Krawiec, 2016
Regional dimension	Brodzińska, 2011; Sosińska-Wit, 2014; Hryniewicka, 2015; Jegorow, 2017
Effectiveness of beneficiaries	Wildowicz-Giegiel, Wyszkowski, 2016
Innovation	Mosionek-Schweda, 2011; Buchwald, Czemiel-Grzybowska, 2012
Small and medium enterprises as beneficiaries	Owczarczyk, 2010; Gorczyńska, 2014; Kordela, 2016
Barriers to the system	Dubel, 2012; Spychała, 2017

Source: author's choice.

This further supports the hypothesis of a lack in analysis concerning beneficiaries, especially the segment of the economy their represents and their regional implantation.

Method

The analysis have been prepared using data available within the SL2014 database (SL2014, 2017), maintained by the Ministry of Economic Development. The database in questions allows to identify individual beneficiaries of EU funds within the programming periods 2007–2013 and 2014–2020. Additional information on the individual beneficiaries have been imported from the REGON database, maintained by the Central Statistical Office of Poland.

The merger of those two data source was needed to provide adequate information on the analysed entities main area of business (according to NACE rev 2.2). Results were aggregated using SQL-based queries. Additional analysis have been conducted using traditional spread sheet programs.

To allow for a better targeted analysis, only a finite number of business entities were used. A major measure of narrowing down the number of analysed entities was to choose those legal forms that show that the said entities are indeed business entities and not public bodies (governmental, regional or local bodies, agencies and the like), health-sector entities as well as teaching institution. Please refer to Table 2 in order to assess the full list of exclusions within the studied population.

Additionally a large number of categories of expenditure or investment priorities that enterprise are direct beneficiaries of, are in fact, public policies enacted and implemented by entrepreneurs or non-governmental bodies. Examples of such actions include i.a. Title III (Energy) for the programming period 2007–2013 (European

Commission, 2006) or Title III (Social, health and education infrastructure and related investment) for the programming period 2014–2020 (European Commission, 2014).

Table 2. Types of entities analysed

	Used in the analysis	Rejected
Type of legal forms of EU funds beneficiaries	Sole proprietor, Limited liability company, Joint stock company, Partnerships, Cooperative, Funds, Undefined legal forms	Schools, higher education entities, NGO's (faith-based included), Trade unions, employers organisation, chambers of commerce
Types of ownership	Privately owned (domestic and foreign), State-owned companies	Central, regional and local government
Type of activity (according to NACE)	A–S	T, U

Source: author's choice.

Results

A total of 32,343 unique beneficiaries have been identified by the author as being entrepreneurs and beneficiaries of EU funds during the period 2007–2020 (up to June 2017). However for the programming period 2007–2013 a total number of 29,431 unique beneficiaries have been identified and for the latter 2014–2020 a total number of 5,862. Additionally in the case of almost 500 entities the author was not able to fully identify their voivodship of registration (a majority of those entities where beneficiaries of funds within the programming period 2007–2013).

One must also take into consideration the fact that almost 3,5 thousand entrepreneurs were beneficiaries of both national and regional operational programs within the years 2007–2020 (up to June 2017). For the programming period 2007–2013 this number amounted to almost 2,376 entities and for the years 2014–2020 to 438. Please note that those numbers do not sum up, as 2,733 business entities were beneficiaries within both programming periods.

A closer look at the results obtained shows that highest number of unique beneficiaries can be identify in the Mazowieckie voivodship (more than 15% in the first period and more than 13% in the second). A high number of beneficiaries can also be identified in four other voivodships (Małopolskie, Śląskie, Lubelskie and Wielkopolskie). However those result should not be seen as a novelty, since those regions (apart from Lubelskie) are characterised by a large number of active enterprises (GUS, 2016). An interesting result is the difference between the median and average result of unique beneficiaries within the business sector is within 1 ppt. For additional information please refer to Table 3.

Table 3. Number of unique beneficiaries by programming period and voivodship

Programming period	2007–2013	2014–2020	Total	2007–2013	2014–2020	Total
Voivodship	number of unique business entities			share (%)		
Dolnośląskie	1,505	533	2,038	5.11	9.09	5.77
Kujawsko-pomorskie	1,430	138	1,568	4.86	2.35	4.44
Lubelskie	2,001	400	2,401	6.80	6.82	6.80
Lubuskie	661	117	778	2.25	2.00	2.20
Łódzkie	1,846	337	2,183	6.27	5.75	6.19
Małopolskie	2,682	531	3,213	9.11	9.06	9.10
Mazowieckie	4,594	766	5,360	15.61	13.07	15.19
Opolskie	874	188	1,062	2.97	3.21	3.01
Podkarpackie	1,580	396	1,976	5.37	6.76	5.60
Podlaskie	835	142	977	2.84	2.42	2.77
Pomorskie	1,483	315	1,798	5.04	5.37	5.09
Śląskie	3,312	558	3,870	11.25	9.52	10.97
Świętokrzyskie	792	218	1,010	2.69	3.72	2.86
Warmińsko-mazurskie	1,233	259	1,492	4.19	4.42	4.23
Wielkopolskie	2,994	765	3,759	10.17	13.05	10.65
Zachodniopomorskie	1,135	195	1,330	3.86	3.33	3.77
NULL	474	4	478	1.61	0.07	1.35
Total	29,431	5,862	35,293	100.00	100.00	100.00
Median result	1,483	315	1,798	5.04	5.37	5.09
Average result	1,731	345	2,076	5.88	5.88	5.88

Source: author's calculations based on the SL2014 database.

Taking into account the size of the business entities, a large majority of all beneficiaries of EU funds were micro enterprises (45.85%), followed by small (29.62%) and medium (16.55%) entities. Large enterprises constituted less than 8% of all beneficiaries. However there are visible difference between the share of each group in national and regional operational programs. The share of micro and small-sized enterprises in regional operational programs is lower than in the national ones. Additionally the share of medium and large-sized enterprise is higher in national programs. There are some discrepancies between the two periods concerning micro entities. However their impact on the overall result could be describe as minimal. For full details – please consult Table 4.

Table 4. Unique beneficiaries by size class, programming period and type of programs (%)

Size class	2007–2013			2014–2020			Total
	national operational program	regional operational program	total	national operational program	regional operational program	total	
Micro	49.64	43.75	47.15	27.43	45.98	39.95	46.07
Small	26.24	33.19	29.18	30.97	34.07	33.06	29.76
Medium	14.47	18.77	16.29	27.03	13.36	17.81	16.52
Large	9.65	4.29	7.38	14.57	6.59	9.18	7.65
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: author's calculations based on the SL2014 database.

Taking into account the number of project being co-financed through different EU programs, that are were implemented by enterprises of different size class, the highest number of projects concerned entities belonging to NACE code P (Education) – 23.131 (amounting to 26.46% of all projects). They largely overtook entities belonging to NACE code C (Manufacturing) as well as to NACE code M (Professional, scientific and technical activities). Interesting results can be further seen in the NACE code H (Transporting and storage), which is dominated by beneficiaries identified as large enterprises. The same result can be seen in the case of NACE code D (Electricity, gas, steam and air conditioning supply) and NACE Code 0 (Public administration and defense; compulsory social security). However the latter two codes are naturally dominated by rather large entities due to the nature of the service and product they provide to the general populace. Additional discrepancies can be also seen between beneficiaries of National (NOP) and Regional (ROP) Operational Programs. For full details – please consult Table 5. Additional data concerning the co-financing level of the projects in question can be consulted in Table 6.

Table 5. Number of projects by size class, programming period and NACE code (number)

NACE	Period	Size class							
		micro		small		medium		large	
		NOP	ROP	NOP	ROP	NOP	ROP	NOP	ROP
1	2	3	4	5	6	7	8	9	10
A	2007–2013	22	43	6	42	2	6	6	2
	2014–2020		9		10	1	3	2	1
B	2007–2013	5	49	5	47	10	32	10	3
	2014–2020		4	8	10	10	10	2	
C	2007–2013	934	2,077	1,661	3,477	2,030	2,537	678	123
	2014–2020	156	338	365	651	493	502	137	33
D	2007–2013	59	95	14	23	24	18	206	130
	2014–2020	3	19	5	8	6	5	49	36
E	2007–2013	35	77	113	132	142	66	241	113
	2014–2020	6	10	44	23	57	18	11	32
F	2007–2013	197	736	177	655	150	341	30	34
	2014–2020	13	53	34	81	34	36	5	3
G	2007–2013	1,156	1,403	1,147	1,170	691	470	131	13
	2014–2020	47	202	90	197	61	73	1	4
H	2007–2013	57	106	77	75	55	57	268	181
	2014–2020	4	10	1	10	5	14	52	34
I	2007–2013	69	555	55	347	20	66	5	3
	2014–2020	3	24	4	41	2	3		
J	2007–2013	3,370	466	811	222	336	74	186	27
	2014–2020	127	218	111	139	62	28	112	6
K	2007–2013	238	47	178	41	68	18	125	37
	2014–2020	20	51	6	12		6	3	31
L	2007–2013	136	154	74	126	34	95	125	69
	2014–2020	5	38	1	9		15	8	32
M	2007–2013	2,511	1,177	893	311	346	110	446	57
	2014–2020	208	464	108	181	35	40	35	75
N	2007–2013	345	230	148	73	89	25	49	6
	2014–2020	10	50	6	40	8	8	4	24

1	2	3	4	5	6	7	8	9	10
O	2007–2013		2	1	1			1	3
	2014–2020								2
P	2007–2013	4,228	145	2,147	39	132	4	276	
	2014–2020	191	1,096	119	572	3	21	3	35
Q	2007–2013	267	1,503	89	251	83	104	19	118
	2014–2020	24	235	21	119	30	46	12	59
R	2007–2013	87	162	15	32	8	6	6	16
	2014–2020		10		6	2	1		2
Total		14,533	11,858	8,534	9,173	5,029	4,858	3,244	1,344

NACE codes S and U were omitted.

Source: author's calculations based on the SL2014 database.

Table 6. Value of EU co-financing of projects by size class, programming period and NACE code (mln pln)

NACE	Period	Size class							
		micro		small		medium		large	
		NOP	ROP	NOP	ROP	NOP	ROP	NOP	ROP
1	2	3	4	5	6	7	8	9	10
A	2007–2013	13.3	27.8	3.2	26.0	0.4	4.4	16.5	3.6
	2014–2020	0.0	17.7	0.0	14.5	0.1	1.7	18.3	0.4
B	2007–2013	4.2	27.3	22.9	43.8	49.8	34.9	62.1	2.5
	2014–2020	0.0	2.7	19.6	18.1	48.3	12.2	23.0	0.0
C	2007–2013	1,046.7	718.8	2,267.7	1,840.2	3,808.2	1,688.6	4,108.5	149.3
	2014–2020	340.5	263.4	975.6	750.8	1,907.9	617.8	1,167.2	64.3
D	2007–2013	609.8	207.4	145.9	48.2	330.4	49.8	5,003.8	214.7
	2014–2020	3.3	50.6	24.1	29.9	114.0	26.7	441.2	114.8
E	2007–2013	246.1	94.4	1,400.1	111.7	2,617.5	112.1	6,757.6	378.1
	2014–2020	26.9	15.3	606.5	59.3	1,351.1	103.0	879.1	73.0
F	2007–2013	164.4	241.8	234.2	366.1	170.2	271.5	280.7	99.1
	2014–2020	24.7	47.3	234.5	66.8	94.6	28.7	32.3	5.0
G	2007–2013	385.2	362.3	570.1	499.6	458.4	234.5	245.9	7.1
	2014–2020	78.9	125.0	300.7	207.5	167.5	58.3	3.6	4.9
H	2007–2013	65.5	52.5	786.7	172.5	522.7	190.8	24,307.4	2,580.4
	2014–2020	1.5	8.6	0.3	8.3	94.6	209.6	8,780.3	1,913.1
I	2007–2013	22.9	426.1	35.6	357.3	26.4	96.8	21.2	5.3
	2014–2020	5.8	20.0	2.1	29.5	5.0	1.7	0.0	0.0
J	2007–2013	1,739.0	142.1	1,416.8	136.7	361.2	61.6	506.0	444.4
	2014–2020	244.1	193.9	433.3	152.3	227.0	28.5	1,511.0	11.8
K	2007–2013	165.7	114.1	132.2	98.9	104.0	70.2	594.4	846.2
	2014–2020	843.0	34.4	42.5	9.7	0.0	8.1	704.1	1,325.7
L	2007–2013	75.6	143.9	42.7	149.4	99.4	123.2	967.8	274.7
	2014–2020	13.9	29.2	6.7	3.0	0.0	6.9	12.8	80.6
M	2007–2013	1,769.6	307.1	973.1	160.3	483.3	75.1	2,199.0	155.7
	2014–2020	614.4	346.2	360.5	258.7	170.0	29.5	270.3	427.0
N	2007–2013	159.4	82.2	178.5	56.3	87.8	18.0	262.6	31.6
	2014–2020	7.9	39.0	21.2	23.8	19.8	6.7	6.7	28.8

1	2	3	4	5	6	7	8	9	10
O	2007–2013	0.0	0.0	1.7	0.1	0.0	0.0	24.1	27.3
	2014–2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.7
P	2007–2013	2,152.1	32.3	1,566.5	23.3	131.5	1.9	254.3	0.0
	2014–2020	205.0	732.3	146.5	524.6	5.9	22.5	4.1	28.6
Q	2007–2013	159.1	367.6	77.0	157.8	146.0	103.0	30.2	358.7
	2014–2020	38.4	160.7	27.0	103.1	68.7	54.3	24.1	229.3
R	2007–2013	75.8	68.9	68.8	21.2	13.5	4.5	21.1	81.9
	2014–2020	0.0	6.6	0.0	4.7	40.0	3.6	0.0	1.2
Total		11,302.5	5,509.8	13,124.7	6,533.9	13,725.2	4,360.3	59,541.4	10,036.7

NACE codes S and U were omitted.

Source: author's calculations based on the SL2014 database.

Limitations

The method used by the author have numerous limitations directly linked with the quality of data provided by the beneficiaries themselves and their further processing by different managing authorities of National and Regional Operational Programs. Further study should be conducted using more complex (and automated) data mining technique.

Conclusions

Results obtained from the merging of two data sources (the official registers of beneficiaries of different EU co-financed projects and the REGON database) show important differences within the beneficiaries population. Enterprises that realised EU co-financed projects differ in terms of size class, NACE classification of their main business activity as well as value of executed projects. Differences between the different polish regions can be seen in all analysed dimensions.

However the author is unable to create a valid hypothesis to what extent those discrepancies are linked with the structure of the different regional economies and to what extent are they the product of policy choices made by the managing authorities. Further cross-study concerning the structure of active entities is needed to provide a valid explanation to those disparities. It is especially startling in the case of micro and small enterprises, since the majority of Polish regions share the same high amount of those entities.

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BALANCED SCORECARD AS A TOOL FOR APPLICATION OF EU ASSISTANCE INTO INNOVATIVE DEVELOPMENT OF TOURIST COMPANIES

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Abstract

Staying on the market in a turbulent environment requires tourism companies to be flexible in their activities and abilities to anticipate the direction of those activities. In order to achieve and maintain long-term profitability, companies must determine and implement adequate strategies as well as asses them in accordance with appropriate criteria. In the work, the authors present the Balanced Scorecard (BSC) as a tool for application of EU assistance into the process of innovative development of a tourism company. Inspiring to examine the investigated company from four different perspectives, the results of the company's activity have been presented via a balanced system of BSC indicators.

Introduction

The varied generic structure of the needs reported by tourists has specific implications in the sector of tourism management. Tourism is nowadays a way of life for a man, a way of realizing various values by him, a way of experiencing the world.

Tourism is also an economic phenomenon. It is organized by tourism enterprises offering services that are the source of their development and expansion of the profit zone. Success requires the ability to balance between strategic and operational thinking. Tourism enterprises must constantly balance the time and resources devoted on the one hand to increasing the use of service potential, and, on the other hand, to develop the brand and establish a strategic course (Pender, Sharpley, 2008, p. 139).

Development of technology creates and stimulates development of a number of new products, which the companies that are seeking to strengthen their market position must observe and try to capitalize on by implementation – which, in turn, requires significant financial investments.

Assistance provided as part of the sectoral policy is one of the most prominent forms of business support (particularly in the SME sector) in the European Union. The effect of that support should involve improvement of the condition of companies, manifested through growth in size or investments in innovations. As a result, the financial resources for companies are to be translated into a set of logically related cause and effect relationships defining the effectiveness and efficiency of operations.

The Balanced Scorecard, created by D. Kaplan and R. Norton has become an objective tool for measuring the effectiveness of a company's activity (Kaplan, Norton, 2002). This concept, as a method of strategic management, is increasingly disseminated among practitioners who see measurable benefits in the development and implementation of this idea. Inspiring an enterprise from four different perspectives (financial, customer, dynamic, operational) allows analyzing the company's performance through a new, balanced indicator system.

The study uses this method to assess the effectiveness of managing the process of allocating EU funds to the development of tourism enterprises presented in the case study.

Structural funds as a form of supporting enterprise development, as part of the EU assistance

Most organizations – regardless of the form, type and subject of their activity – are forced to look for external sources of financing. These funds are needed for both operational activities and development projects in considerable amounts.

Since 2004, Poland has been a member of the European Union, which co-funds the projects implemented as part of the EU policy and with cooperation of the EU. Effective use of the funds obtained for implementation of these projects depends, in large part, on selection of an appropriate planning method.

The main tool for conducting both the European Union's cohesion policy as well as other types of community policies are various programs and instruments of financial support, many of which are described as the regional policy of the European Union. The instrument for implementation of the EU regional policy are the EU structural funds, the role of which is to increase the social and economic cohesion of the member states, through realization of the priority objectives set by the EU policy. The effective programming and implementation of structural funds is determined by the relevant programming principles as well as specific EU procedures for financial management, control, monitoring and evaluation. In the 2007–2013 perspective, Polish enterprises have made significant use of the opportunities offered under non-repayable financing. Year 2004 initiated a new EU perspective and created new opportunities for financing the development of enterprises from European funds.[1]

[1] An important change in the process of distributing the EU funds is the increase in the role of the so-called repayable financial instruments (loan funds and seed capital funds) played in financing the development of enterprises. Under the EU cohesion policy, this

For the years 2014–2020, more than 80 billion Euro has been allocated to Poland for realization of socio-economic cohesion. During this period, subsidies for enterprises should be aimed at building links with the sphere of science, so that the Polish economy will increasingly rely on innovation rather than imitation.

As part of the cohesion-policy funds, 6 national programs will be implemented, including a supraregional one for the provinces in Eastern Poland. A proposal for allocation of the funds within the national programs has been presented in Table 1.

Table 1. Proposal of EU funds allocation in 2014–2020 for national programs

Program	Allocation, after conversion to the current prices (million Euro)
Infrastructure and Environment	27,513.9
Intelligent Development	8,614.1
Knowledge Education Development	4,419.3
Eastern Poland	2,117.2
Digital Poland	2,255.6
Technical Support	700.1
Total	45,620.1

Source: own elaboration on the basis of the data from the Ministry of Infrastructure and Development, www.mir.gov.pl/fundusze/fundusze_europejskie (29.09.2017).

In addition to the national programs, just as in the previous years, implementation of 16 regional programs has been anticipated. In the new perspective, there will be more decentralization in the use of EU assistance. It envisages that most of the resources within the structural funds will be managed at the regional level.

In the process of effective implementation of structural funds, it is necessary to emphasize the importance of appropriately prepared projects[2] that fit well with program documents and ensure the creation of favorable conditions for innovative enterprise development. Correct justification of the project's implementation means ensuring compliance of the project's objectives and results with such strategic documents as development strategies of the country, region, commune, development strategies of the given industry in the EU, in the country, in the region; or correspond with smart region's specialties. This fact enforces the use of modern management concepts, adequate to the challenges of the modern knowledge-based economy.

type of instruments plays an increasingly important role, due to their renewability and ability to force project management efficiency. Renewability means, in this case, that the loans granted to enterprises are repaid and the repaid funds can provide support for other entities. Additionally, the potential beneficiary must plan the structure of the expenses included in the business concept of the venture, as to be able to repay the all the loaned capital. In the debt financing model, the beneficiaries in Poland can primarily use the loan funds, which have been capitalized with public funds and the credit offers within the "Credit for technological innovations" financed by the Operational Program of Innovative Development 2014–2020 (Kasprzak, 2016, p. 46).

[2] The project includes a set of activities undertaken in order to achieve clearly defined objectives within a given time and with the help of the budget allocated to it (Trocki, Grucza, 2007, p. 13).

Strategic management as a carrier of the benefits for the tourists and for the companies providing tourist services

Motivations of the modern tourist are characterised by a large individualism and the search for various attractive forms of high-standard recreation. Media, in particular the Internet, have a great impact on it. A special role is played by various types of events (fairs, cultural and sports events) on which it is supposed to be, as well as theme parks, science and technology parks, the visit of which forces the developing civilization of knowledge (Weiermair, Mathies, 2004, pp. 96–98).

The needs of the tourists, depending on the purpose of their travel and on the values desired by them, are very diversified. Satisfaction of these needs is the source of the product offer of the entities functioning on the supply side. The tourist offer should be seen as a process realized by different sectors of the economy, also functioning outside the tourism sphere. Taking into account the process (and its elements) of providing services in a tourist enterprise and their connections with the environment, we can distinguish (Sławińska, 2002, p. 24):

- entrepreneurial functions related to the preparation and launch of new products for sale (both individual services, as well as benefit packages), discovery of market niches,
- operational functions, the essence of which is expressed in taking steps leading to transforming the resources at the disposal of the economic entity from tourist products,
- marketing functions related to reaching the buyers with the offer and supporting its sale.

These functions are aimed at achieving the assumed goals, and whether the goals will be achieved by the tourist enterprise, the effectiveness of management and the market verifying the tourism products offered by the entity decide.

The company must therefore strive to optimize the conditions of its operation. Define the directions of development by identifying, anticipating future changes and developing a strategy that makes it an organization capable of development.

Developing the concept of pro-innovative strategic changes and their implementation should be subordinate to the strategic management applied by the company. In the practice of the operation of small enterprises – and such is the case in the local tourism industry – the strategy is most often proprietary, non-formal. Strategic decisions are not made under any strict organizational procedures and are not undertaken in cooperation with subordinate employees, but they may be consulted outside the company (Olszewska, 2008, p. 34).

An enterprise must integrate its activity in such way, as to provide the customers with the goods and services that are of a high value for them. It is the customer who ultimately decides whether the product and the company connected with it will succeed, since by buying and paying he/she generates the company's profit, and, consequently, creates the basis for its development. Properly selected tools, allowing co-creation of the values in points of interaction between the company and its surroundings, become necessary in this process.

For this purpose, many companies use the Balanced Scorecard (BSC) created by R.S. Kaplan and D.P. Norton. The Balanced Scorecard is an excellent tool for describing and communicating the strategies to the customers, the co-operators, the suppliers and the employees in a consistent manner.

A strategy that lies at the root of enterprise value creation is a platform allowing companies to thrive, through successful implementation of the strategic goals. By engaging in activities in the relevant markets and building

a competitive advantage on them, the company obtains appropriate conditions for growth and generation of higher profits, which determines the creation of value. (Doyle, 2003, pp. 66–67).

Obtaining economic benefits from business activity in the tourism sector requires financial outlays, due to high requirements of tourists in terms of the standard of services provided. Majority of enterprises – regardless the form, the type and the subject of the business activity, are forced to seek external sources of financing. If an enterprise wants to effectively use the full potential inherent in the assumptions of the EU assistance, it must maintain a proper distance from the current issues, without losing sight of the directions determined by the strategies. The Balanced Scorecard is a tool that supports the managers in this decision-making process, and, consequently, eliminates the problems associated with effective management entirely.

The Balanced Scorecard is more than just a performance measurement system. It is also a system supporting long-term implementation of the strategies for innovative organizations. The four perspectives of efficiency examination provide the executives with a universal tool for translating a company's vision and strategies into a set of logically linked efficiency measures.

The proper development of the four perspectives of BSC allows for maintaining a balance between the company's short and long-term goals, between factors affecting the results and their required level, and finally between the measures adopted as part of the assumptions. If we can describe the strategy in a more systematic way, we increase the probability of effective implementation.

Each BSC measure is embedded in a logical cause-and-effect chain connecting the desired effects of the strategy implementation with the factors stimulating these effects. The strategy map describes the process of transforming intangible assets into tangible financial effects. BSC uttering about strategy is a reliable basis for constructing an enterprise management system.

Case study – Application of BSC in the project management process of EU financial assistance in the Guesthouse X

Guesthouse X is located by the sea and its offer is directed to the customers preferring both family rest in the surroundings of nature and the environmental values guaranteeing mental relaxation as well as natural methods of physical rejuvenation. The Guesthouse customers can take advantage of numerous windsurfing schools, cruises on the sea, including cod fishing etc.

The Guesthouse has a capacity of 56 beds. It has 2-, 3-, 4-bed rooms of high standard (a full sanitary unit, a TV, kitchen equipment, exit to the balcony). For motorized customers, the guesthouse offers parking within an enclosed property. The guesthouse is also accessible for the disabled. Legally, the business is carried out by the company's management as a business activity.

The company received a subsidy from the European Union funds, as part of the Priority 3 – Local Development, Measure 3.4 – Microenterprises of Integrated Operational Program of Regional Development 2004–2006. Before starting the project, the guesthouse accommodated guests only in summer. Lack of sufficient own funds did not allow for modernization of the facility. This had become the main inspiration for submitting an application for a project subsidy from the EU funds, which was granted a positive decision.

The aim to be realized with the use of the subsidy was to obtain a larger number of customers and increasing the company's competitiveness. In this regard, the management planned to set up a Web portal promoting the natural and the touristic values of the Pomerania region. The Internet has allowed online booking. New customers were also

supposed to be attracted firstly by introduction, after renovation and a partial modernization, of a new innovative product called chromotherapy (restoring the physical and mental balance of the body through appropriately selected colors). TAs part of the obtained funds, it was also planned to modernize the outdated heating system of the building and extend the tourist season for the whole year

The subsidy application determined the success factors associated, for instance, with the intention to increase the sales and the effectiveness of marketing, which includes several initiatives, each of which is aimed at a particular factor determining realization of the assumed goals.[3]

The total cost of the project implementation (partial extension and modernization of the facility) provided the amount of PLN 93,475.60, co-financing of the project from EU funds – the amount of 60,759.14 (65% of project costs).

Based on the Balanced Scorecard, an attempt was made to find mutual links between the activities undertaken as part of the project implementation, in the area of finance and market development.

Achievement of the strategic targets required integration of many partial actions, each of which was concentrated on the other factors conditioning implementation of the development strategy. As part of the financial perspective, achievement of a 6–8% growth rate in the next couple of years and a reduction of the customer service costs to the industry's best level were assumed.

The targets involved in the customer perspective were associated with creation of partnership relations with 70–80% of the company's customers, which were to be based on achievement of mutual benefits. Improvement of the quality of the service was also assumed, so all the customers would be satisfied with its level.

As part of the external processes perspective (the cycle of innovation and the operational cycle), the following targets were distinguished:

- to increase recognition of the market needs,
- to gain specialized knowledge in the field of chromotherapy and thalassotherapy,
- to implement marketing solutions that are based on creation of new markets,
- to complete the process of the resort expansion,
- to improve the on-line booking process,
- to provide high quality services.

As part of the last of the four BSC perspectives – the development perspective, such targets were set as: improvement of the staff's qualifications, employment of qualified personnel to handle the new product, linking the payroll system with the results achieved and creation of the right climate for undertaking initiatives.

The funds obtained by the company were used in accordance with the targets assumed in the subsidy application. Work on the extension and on modernization of the facility was carried out at the guesthouse, which allowed an increase of the service potential and a gradual increase of the sales of the services in the years 2008–2015, at an average annual rate of 15%. The increase of the sales volume was also related to the planned year-long guesthouse occupancy, which allowed elimination of seasonality in the work of the guesthouse.

A new product – chromotherapy – was introduced, which is an innovative method in the field of health tourism. The customers' interest was high. A promotional package (5% discount or an optional boat trip the Tricity) was

[3] The strategic intentions were developed on the basis of in–depth interviews with the company's executives.

prepared for regular guests – which was intended to increase the sales by 75% (due to the relations with regular customers).

The launch of the Internet portal has improved the work of the staff, increased the availability of customers to book the service and purchase it.The Internet portal also allowed development of relations with the customers. Customer feedback on the internet forums and their positive opinions are an excellent additional promotion of the services at the facility, which, thanks to the obtained funding support, has increased its standards. As a result of these efforts, it was possible to decrease the costs of customer service and an increase of the profit margins for the company.

The positive result obtained have contributed to strengthening of the market position, due to a significant development of the relations with regular customers and acquisition of new ones.

An interview carried out with the owners of the Guesthouse in 2012 has confirmed the constant development of the investigated company. The owners highly valued the usefulness of BSC for the development strategies of a company that has been functioning on a demanding market of tourist services. The owners of the surveyed company are trying to keep up to date with the competitive game field, in the aspect of competitors operating on the market, their actions, in the field of introducing new products or new technologies.

The owners are also aware of the need for further incentives, allowing maintenance and development of the position on the competitive market. Taking into account the current situation of the company, both the internal and the external, as well as the possibility to exploit the opportunities lying in the surrounding environment and in the knowledge on the competitors' activities, the entrepreneurs are planning to undertake new initiatives aimed at achievement of further success in acquiring customers and in building lasting relationships with them.

Final remarks

Achieving a sustainable competitive advantage is a prerequisite for the functioning of enterprises in a long-term market economy. Competitive advantage can be achieved in relation to the environment as a result of adapting to it better than competitors through internal sources resulting from the company's resources and skills.

All strategic activities trigger a reaction on the part of the competition and therefore enterprises must consider different variants of their strategies, both in terms of long-term and short-term actions. In order to meet the customers' challenges and the increasingly tougher competition, a company must have its own development strategy. Knowledge, experience and constant improvement of skills in recognizing customer preferences and how to adapt to them (market research, tracking changes in the environment, establishing contacts with the R&D sphere, etc.) allow managers to reduce the risk of business and develop the company according to their vision.

Under the conditions of market economy, a company's strategy determines its success. A universal tool for translation of an organization's strategy into a set of logically linked cause-and-effect relationships which determine effectiveness and efficiency of the company's activity is provided to executives by the Balanced Scorecard.

A universal tool for translating organizational strategy into a set of logically related cause and effect relationships, gives the management a Strategic Scorecard, which in the assumption of its creators is to constitute an innovative instrument or a management system that enables the improvement of the company's operations (Brzóska et al., 2012, p. 45).

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ANALYSIS OF INVESTMENT STATE SUPPORT FOR THE ELECTRIC VEHICLES SECTOR

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Abstract The following work captures the spectrum of offered incentives for stimulating the electric vehicles uptake in the most significant economies of the world. The paper contains description of popular means of stimulation along with the effects that they have taken on the society and local economies. After an in-depth analysis the evaluation model was developed which assigns weight to each and every factor in the specific national incentive program. The sum of gathered points gives the overall view of the efficiency of introduced program. As a result, different national programs can be compared against each other and the important conclusions can be drawn. Most importantly the Polish act for alternative fuels and electromobility was analyzed and compared to other incentives used by different countries around the world.

Introduction

The ultimate goal of this work is to capture the electric vehicles incentive and subsidy programs and evaluate their effects on market stimulation. The world leading economies in terms of electric vehicles adoption were chosen and their support programs were analyzed. The key components from existing support programs were analyzed taking into account their potential of influencing potential electric vehicle users and the related rating was assigned

to each component. The sum of rated components gives overall strength index for each national subsidy program. The questionnaire based study showed the most important factors for electric vehicles stimulation, are cash subsidies and tax reliefs. The Polish electromobility act was analyzed and compared against the other programs. The assumption can be made that Polish electromobility act will have a positive influence on the market. However it is difficult to evaluate if currently proposed program is enough to popularize electric vehicles in Poland.

The electric vehicle market is facing a number of challenges. Aside from the technological barriers relating to the infrastructure and the vehicles themselves, the issues of the initial up-front cost, potential servicing costs, and the residual value, still remain. For those reasons, governments wanting to facilitate the transition from the conventional automotive market are creating support initiatives, increasing the financial viability of electric vehicles. Currently, most of the government support initiatives relies on tax exemptions. This approach, however, might prove insufficient for the Polish consumer; especially when one considers the current state of the Polish economy and the consumers' view on electric vehicles. Japan was the first to start introducing such government initiatives in 1978, which led to 655 electric vehicles being introduced to the market. In 1996, the Japanese Ministry of Trade and Industry commissioned the Clean Energy Vehicle Introduction Project. As a result, between 1998 and 2002, approximately 40 000 electric and hybrid vehicles were built for the Japanese market. Financial incentives reached 50%. (Electric Vehicle Association of Asia Pacific, 2003). Such initiatives have existed for a number of years now. However, it wasn't until Tesla Motors came about for the world of electric vehicles to undergo the transformation it has seen in the past few years.

Review and Analysis of support programs in selected economies

Norway

Norway is the leading country in the world in terms of programs that stimulate the development of electromobility in both financial and non-financial terms. From the financial sphere, the legislator offers such reliefs as exemption from the 25% VAT tax or exemption from the purchase tax, which makes it more cost-effective in the Norwegian market to buy an electric car than an internal combustion vehicle. To compare, the cost of purchasing a combustion car with performance comparable to the Tesla model S will translate into a tax on the purchase in the amount of 100% of the price. (Harryson, 2015, pp. 5–6). It should be noted, however, that Tesla Motors products are often not classified in subsidy programs. It is worth mentioning, that the phenomenon of imposing high fiscal burdens when buying a car should be considered as a general penalization of the ownership of an internal combustion vehicle rather than a relief for the owners of electric cars.

Another benefit is a significantly reduced road tax, which in the case of electric cars is only NOK 455, while for petrol cars about NOK 2,800 per year (Pressman, 2017). In the case of enterprises, a 50% discount is offered for car fleet tax and increased costs of using an electric car at 4.20 NOK per km for electric vehicles and only 2.0 NOK per km for conventional vehicles which translates into lower taxes. For those who use company cars for private purposes, a 50% discount on additional income is also provided (Harryson, 2015, pp. 5–6). There is also a wide range of discounts, facilitations and tax exemptions such as no fees on toll roads, no fare for ferry crossings, free parking in urban areas, no tolls for bridges, no charge for selected charging stations, access to bus lanes, exclusion from charges in high traffic areas. The offered range of reliefs and redundancies is very wide and it should be remembered that they were introduced gradually over

many years, the first relief in the form of exemption from purchase tax was introduced in 1990 and the last in 2015 concerned exemption from VAT in the case of leased vehicles. The electric vehicle market in Norway is already mature enough that a slow withdrawal from the offered programs is planned, and tax breaks will only be available until 2018. And since 2017, local government units themselves decide on the behavior or reception of such facilities as free parking lots or access to bus lanes. No fees on toll roads will be replaced by reduced fees (Haugneland, 2017, pp. 6–8). The Norwegian government has set a goal that by 2025 all cars sold in this country are to be low-emission vehicles, which will lead to an even stronger penalization of non-ecological solutions.

Netherlands

There are many support programs available on the Dutch market both at the level of local authorities and central authorities. In early times, a vehicle tax exemption was offered there, but in 2014 such support was withdrawn in favor of a 4% registration tax. Currently, the market offers exemption from road tax, a subsidy of EUR 3,000 for commercial vehicles, exemption from vehicle purchase tax, exemption from road tax, concessions for fleet vehicles. Locally offered support programs include, for example, free parking lots, subsidies for the installation of home charging stations or a prize for scrapping the combustion car. In this way, the most popular models of electric cars are cheaper by 50/70% compared to the initial price

China

China is the country with the largest growth in sales of electric vehicles in the world and remains the largest car market in the world. In September 2017, the previous record of electric vehicles sales reached the level of 55,000, which translated into a 68% increase compared to the same period last year, same to September 2017 reached the level of registration of electric cars at the level of 282,000 (International Energy Agency, 2017). It is anticipated that by the end of 2017 China will achieve a market share of electric vehicles exceeding 2% (Pontes, 2017) which, in the case of such a large economy, is a very good result. China is set to ambitious targets for electrification, BYD, the largest manufacturer of batteries and cars in the world, predicts the total electrification of the Chinese market by 2030. China lags behind (in terms of percentage share) only to Norway, the Netherlands, and Sweden, where shares of electricity vehicles for 2016 were 29%, 7% and 4% respectively, and to better understand the phenomenon of the Chinese market, sales between PHEV and BEV should be divided, then it will become clear that China is a definite leader and together with France are markets oriented at Pure electric cars. China owes such rapid development to policies conducive to the popularization of electric cars, a very large battery industry, relatively small restrictions on environmental protection in production and, most importantly, the simplicity visible on the Chinese market, the vast majority of sold solutions significantly lags behind the products offered in the west. In the case of development factors related to the legislation, the release of electric vehicles from the registration lottery remains the basic one. Beijing draws 18k vehicles per month for which registration will be issued, with a monthly demand of approx. 1.8 million. However, in the case of electric cars, some restrictions have been introduced due to the efficiency of the power grid (Chun, 2016). The efficiency of power grids will determine the development of electric vehicles for each of the world's economies.

China offers a lot of subsidies in its strategy, including a surcharge on the purchase of a car at around $ 10,000 for pure electric cars and $ 6,000 for hybrid cars. Hangzhou residents can count on a surcharge of up to $ 20,000.

Unfortunately, due to the fact that the Chinese market is protected, many types of cars are not eligible for subsidies and concessions. This may lead to the slowdown in the growth of Western brands in Asian markets.

Another of the discounts offered is the exclusion from 10% sales tax on all brands, regardless of origin. The Chinese government has decided that some of the western brands will be excluded from paying the import tax, with this kind of relief being offered only to joint venture producers with Chinese producers. The last of the offered concessions on the Chinese market is the exemption from charges related to street congestion. In many areas, other subsidies for electric vehicles are also offered for 3 years after purchase or 60,000 km.

It should be remembered that apart from purely fiscal and financial reliefs, China has invested $ 14 billion since 2014 in the development of infrastructure for electric vehicles.

The negative effect of broad financial support on the purchase of electric vehicles has caused the effect of electric car price rises, and so Zotye or Zhi Dou products without discounts are sold at prices around EUR 20 thousand, which is not an attractive offer even compared to products of western companies. (Price: EUR 15 thousand with batteries).

France

The offered discounts include, among all, an ecological bonus for pure electric vehicles in the amount of EUR 6,000. In 2015, there began a program for the support of the exchange of old cars with a diesel engine into new electric vehicles; it took the form of an ecological bonus amounting to EUR 10,000. Apart from typically financial programs of support, there are also such facilitations as free access to parking lots or tax reliefs in the installation of chargers in residential areas. Many of the Regions of France offers their own programs of support for electric vehicles. France is one of the leading economies of the EU in terms of the prevalence of electric cars as well as vehicles in L7E and L6E homologations.

Denmark and Sweden

In the case of Sweden, discounts were offered for the purchase of new electric cars and ultra-low-carbon cars at a level of 50 grams per km. Cars with energy consumption below 37 kWh/100 km and cars with emissions below 120 grams per 1 km were exempted from road tolls for the first 5 years from the date of registration. Users of company cars for private use could enjoy a tax reduction of around 40% compared to conventional cars (Desk, Lifestyle, 2011). However, in 2014, the limit of 5,000 registered new green cars was exhausted and the program was completed (BIL Sweden, 2014), where the association of the car industry in Sweden applied for the extension of the program by another 100 million crowns, which would allow for the financing of another 2,500 cars (BIL Sweden, 2014). As a result of these efforts, the program was extended for next years until 2016.

In the case of Denmark, the available concessions and facilities are limited due to the rich and preferred cycling infrastructure in the Copenhagen region, which represents the majority of the Danish population. The most important reliefs were the exemption from 180% of tax on the purchase of a car which should be considered more in the case of the penalization of car purchases than promoting the purchase of electric cars, the discount applies only to cars with normal parameters which excludes Tesla cars from among the indirect beneficiaries. The remaining discounts include, among other things, exemption from the ecological tax and access to car parks only for electric vehicles.

Germany

The current support policy for the popularization of electric cars is not enough to achieve the 1 million cars planned by the German government by 2020. In connection with the above, the German government planned to work on subsidies for electric vehicles in 2015/7. Until 2014, implementations of the electric fleet were achieved only at the level of 24% of the planned 100,000 vehicles. In the case of leaving the market without state initiatives, it is anticipated that the German economy will be delayed by about 40% by 2020 relative to the initial plans. Many of the studies on the German market state that the average user pays more taxes in this country with an electric car than if they had an combustion one.

Subsidies available in Germany are a temporary exemption from annual road tolls for a period of 10 years from the date of the first registration of the vehicle. Free parking spaces and access to bus lanes for some low-emission vehicles.

Comparative analysis of States

Table 1. General information on electric vehicles market

	NO	CN	NL	UK	FR	DK	SE	DE
General Information								
Total population	5,086	136,9811	16,775	64,100	66,000	5,627	9,621	81,254
Total Evs	74,583	203,345	63,658	43,000	25,000	6,000	14,344	30,000
Evs per 100.000	1,466	15	379	67	38	107	149	33
EV Growth %								
2012–2013	>70	>20	>400	>100	–	–	>50	>100
2013–2014	>300	>235	>160	>120	–12	>250	>95	>75
2014–2015	>70	>75	>55	>75	>65	>120	>75	>40
Total EV Chargers (2014)	6,841	17,254	15,088	2,842	6,000	1,200	909	14,844

Source: Harryson (2015).

Analyzing the available support programs and their effects, we can clearly see the impact of fiscal exemptions on increasing the share of electric vehicles on the market. When we examine the market in 2012 and 2013, we observe a large increase in countries such as the Netherlands and Norway. In these countries, a significant share in the cost of car purchase has taxes reaching even 100% of the initial price. A large share of taxes in the cost of car purchases translates into measurable effects of fiscal subsidies in the form of an increase in the market for low-emission vehicles. Impressive increases for the years 2012–2013 also concern China, where a 20% change translates into a large volume of vehicle sales. Analyzing the years 2013–2014, we see increases of hundreds of percent, which clearly stems from the policy aimed at reducing the costs of owning an electric vehicle.

In the case of leading states, we are dealing with such a large discount of electric cars that the cars are no longer competitive. One example is the comparison on the Norwegian market of a Renault Clio available for around EUR 26 thousand, with its electric counterpart Renault ZOE, taking into account all subsidies, it will cost only EUR 23 thousand. (Harryson, 2010, pp. 10–11)

The organization of fiscal burdens presented in Figure 1 shows the essence of the policy pursued in Norway. The completely reverse structure is in Germany, where the weak impact of subsidies on strengthening the competitiveness of electric cars is visible. In order to obtain the same effect as Norway, the German state would have to subsidize cars with real money. In the case of Scandinavian countries, it is enough to apply tax breaks to make the purchase more attractive than buying a combustion car. It should be remembered that this kind of surgery is possible only because the Scandinavian countries use significant fiscal burdens.

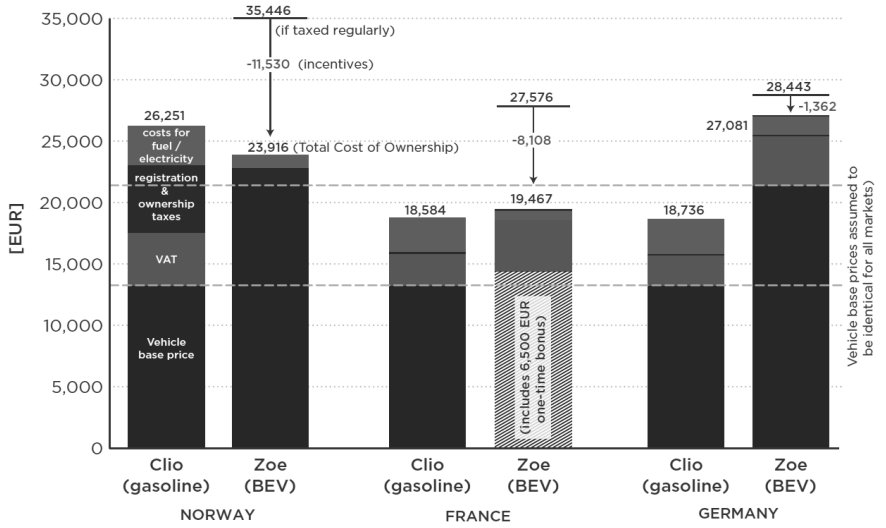


Figure 1. Subsidy influence on car cost – gasoline vs electric

Source: Mock (2014).

Currently in the world, each of the leading economies is working on electrification of transport mainly through various types of subsidies, reliefs, redundancies, facilities and incentives. Regardless of the type of support offered, they have a positive impact on market development. It should be remembered that the main factors hampering the market development are prices, electric car parameters and lack of infrastructure, these elements cannot be compensated only by support programs based mainly on tax concessions. To support the further development of low-emission vehicles, it is necessary to support the research and development sector electromobility also for large companies in the automotive industry. It should be remembered that the transformation of the market into electric cars will affect all companies in the automotive industry, in particular for companies well-established on the market of conventional solutions. In the future, these factors will also have to be addressed to prevent possible crises caused by the elimination of combustion engines and fossil fuels.

Analysis of the Polish Act on electromobility and alternative fuels

The comment below applies only to the part of the Act on electric vehicles, omitting other alternative fuels.

Table 2. List of positive and negative factors, own study

Positive	Negative
– Exemption from excise tax – Depreciation of 30 k EUR (Article 52) – No building permits required – Expansion of the electric fleet of public sector entities and state administration – Expansion of infrastructure charging 6,000 low and medium power stations and 400 high power charging point – New type of business – vehicle loading services (Article 54) – Timely available bus lanes (but most likely for more than one person in the car) – Electrification of public transport – GDDKiA 5-year infrastructure development plan – Public buildings, multi-family residential buildings and associated parking spaces are designed and built to provide connection power that allows them to be equipped with charging points of at least 3.7 kW – Register of Alternative Fuels Infrastructure – Reduction of fees for OSD connections – Parking spaces for EV – Definition of research on autonomous vehicles	– No VAT exemption (VAT exemption practically applicable worldwide) – Clean transport areas – the obligation of OSD participation (interpretation) – Division operator, service provider, DSO, salesperson – a lot of intermediaries – Counters at each charging point – Charging station as a construction object – The Act regards only the future fleet of charging stations, omitting the existing infrastructure

Source: own study based on the Polish act for alternative fuels and electromobility.

Depending on the interpretation (interpretation of the charging point), the Act introduces the obligation to install a meter at each of the charging points, which may mean the counter on each of the charging station's connectors. In the solutions available on the market, the certified/sealed energy meter is installed in the place of connection to the power grid and the distribution for individual links is carried out by the station's IT system.

The Act imposes an obligation on the operators of generally accessible charging stations to provide services by Distribution Network Operators, which complicates the operation of the charging stations already established. The Act does not provide for charging stations using existing connections in hotels, shopping centers and other facilities. The obligation to join OSD will exclude some of the existing charging stations and forcing the use of a connection provided by energy corporations, which may lead to a longer development time of the charging network.

The Act introduces a multi charging provider services model by enabling the operation of many service providers on one physical infrastructure element under the same conditions. "The operator of the Public Charging Station (...) provides the charging service providers with access to the public charging station on an equal basis" (Ustawa o elektromobilności i paliwach alternatywnych…, 2018) what in interpretation may mean that the operator must support different service providers at the same prices, it should be remembered that each of the service providers can differentiate their offer, which in the end may lead to the creation of new cost factors on the part of the charging station operator. This solution gives the end users of the charging station a lot of flexibility and gives the opportunity to limit the number of accounts and billing, while maintaining a large coverage of the charging station grid in Poland.

Evaluation model of electric vehicle support programs

On the basis of the above study, data obtained from interviews with people interested in the electric car purchase and statistical data from Figure 2, it was established that the most important factors for potential users of electric vehicles are tax exemptions and cash subsidies for buying an electric vehicle, that is, realistically reducing the cost of owning an electric car, these factors were assigned a weight equal to 20 points. The remaining financial and non-financial elements were assigned scales equal to 5 points.

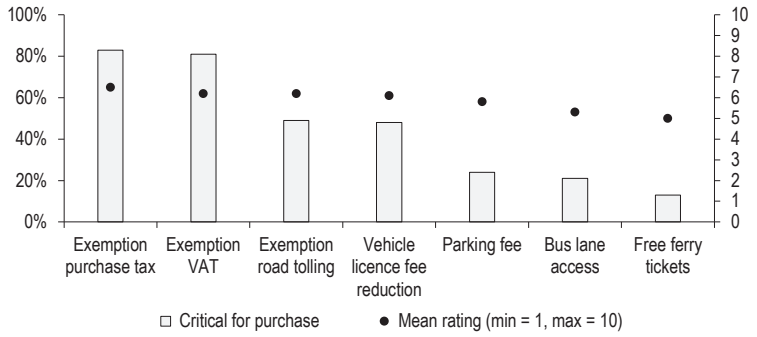


Figure 2. Role of incentives for BEV purchase

Source: Norbech (2017).

Table 3. Incentives analysis

Name	No	CN	NL	FR	DK	SE	DE	PL
Fiscal and Finacial reliefs								
Exemption from purchase tax (20)	20	20	20	–	8	–	–	3
Exemption from VAT (20)	20	20	–	–	–	–	–	–
Cash subsidies (20)	–	20	–	11	–	8	–	–
Exemption from vehicle registration tax (5)	–	–	–	–	3	–	–	–
Exemption from road tax (5)	4	–	5	–	5	3	4	–
Exemption from company car tax (5)	3	–	4	1	–	4	–	–
Surcharge for scrapping an old vehicle (5)	–	–	3	4	–	–	–	–
Exemption from congestion tax (5)	5	5	–	–	–	–	–	–
Exemption from toll fees (5)	5	–	–	–	–	–	–	2
Exemption from fees for ferry crossings (5)	5	–	–	–	–	–	–	–
Exemption from bridge fees (5)	5	–	–	–	–	–	–	–
Exemption from parking fees (5)	5	–	3	3	3	-	5	1
Exemption from charging fees (5)	3	3	–	–	–	–	–	–
Co-financing for household chargers (5)	–	–	3	3	–	–	–	–
Preferential depreciation write-offs (5)	5	–	–	–	–	–	–	3
Non financial reliefs								
Access to road strips for emergency vehicles (5)	5	–	3	–	–	–	4	3
Sum	85	68	38	22	19	15	13	12

Source: own study based on Harryson (2015).

Conclusions

Incentives for electric vehicles market stimulation have long history in the world. Up till now the idea of electric vehicles was not feasible due to lack of technology and very high initial costs that potential buyer would have to overcome. However the recent years have brought an advancements both in tech and in people's thinking, therefore the incentive programs have become very important for the future of electric vehicles.

The polish electromobility act is the first step in the development of the electromobility market in Poland. The Act defines the principles of building an infrastructure base network for alternative fuels to create favorable conditions for the emergence of an electromobility ecosystem. The extension is to allow for the free movement of alternative-powered vehicles in urban agglomerations, the network of trans-European roads and in areas with high population density. The document defines the roles and responsibilities of state entities. The Act, by introducing a new type of business activity which is charging vehicles, allows to exclude a concession in this type of energy sales, which should be interpreted as a positive factor affecting the market. The legislator introduces a number of provisions in the construction law, which exclude the need to obtain construction permits for charging stations outside the charging infrastructure for road public transport. The Act introduces a number of tax reliefs, such as excise duty exemption, and a higher depreciation threshold. There is no element of VAT exemption for the first period of changes, which was widely used in the majority of leading economies. Massive tax reliefs in the Scandinavian countries allowed for the widespread popularization of electric cars. In addition to the financial concessions, the Act provides for the use of bus lanes by electric cars or free parking in paid parking zones, which can greatly facilitate the implementation of transport tasks in cities. The Act does not apply to an existing charging network or to points which cannot be defined as publicly available. In the case of the public network of charging stations, a significant restriction has been introduced which is the obligation of the Distribution Network Operators to participate in the construction of new networks and re-qualification of existing ones to "generally available" stations.

The package developed by the Polish legislator is the beginning of changes aimed at reviving vehicles powered with alternative fuels on the market. It is expected that the impact of the Act will be visible in the form of expanding the vehicle charging network and increasing the share of electric vehicles on the Polish car market as well as the development of the market environment that are sales and storage of energy for electromobility, engineering, design, repair, service and management of the electromobility ecosystem. The Act covers very important issues related to electromobility, however, it should be remembered that for the average consumer the most important factor is the total cost of ownership of a vehicle that has not been addressed by the legislator, although it is a recognized and widely used measure to popularize electric vehicles by leading global economies in the initial development phases. Analyzing the results from the table above, it is clear that, over time, the electromobility legislation will have to evolve to keep up with changes at both community and technology levels. Dissemination of alternative-powered vehicles will depend to a large extent on changes in the consumer's beliefs of mobility. Currently in the world we see a change in the trend from the ownership model to the service consumption model. This change is particularly evident in the number of new car-sharing networks in the world. The use of changes in the way we think today gives Poland the chance to appear on global markets as a provider of solutions for new integrated mobility. It should be as well remembered that Poland aspire not only to be an electric vehicles consumer but as well a part of automotive industry. In recent years Poland was strongly developing in terms of hi-tech and IT domains especially for automotive industry. These developments could be used as a leverage to create new highly innovative industry connected with electric vehicles and emerging markets such as shared economy. To have this potential used to the

fullest Poland should create an environment in which highly innovative, small businesses could be accelerated to the extent that would allow entering international markets.

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ABSORPTION OF THE EU FUNDS IN THE CONTEXT OF INSTITUTIONAL EFFICIENCY OF LOCAL GOVERNMENTS IN POLAND

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ABSTRACT This article reports an empirical study whose aim was to verify a hypothesis assuming the presence of a relationship between institutional efficiency of local governments and the value of financial means acquired from the EU budget and from other foreign programmes (including the contribution from the state budget as a co-financing of projects executed with the support of structural funds and the EU Cohesion Fund). The analysis was based on mixed data, i.e. primary (obtained via a survey from 1,220 municipalities) and secondary ones (from the Local Data Bank). The institutional efficiency of local governments was measured with an EFF aggregate metric, which was the sum of weighted synthetic partial metrics determined for the basic areas of activity pursued by local governments, while the identification of relationships was based on one-factor analysis of regression. The results substantiated positive verification of the hypothesis and demonstrated that efficiency (as defined for the purpose of this study) cannot be treated as an exclusive determinant of the absorption of EU funds by municipalities. More important in this respect are the size of a population and budgetary revenues in a given municipality.

Introduction

The question of institutions affecting economic processes is gaining increasing importance in both theoretical and empirical research. Most economists have agreed that a fundamental statement underlying new institutional economics (NIE) is the claim that institutions determine the long-term rate of economic growth. A review of the research into NIE supports the claim that there has been a change in the perspective of studies on institution. In the

1990s the focus was on determining the contribution of institutions to the shaping of incomes around the world as well as their influence on economic growth (Knack, Keefer 1995, pp. 207–224; 1997, pp. 1251–1286; Mauro, 1995; pp. 681–710; Hall, Jones, 1999, pp. 83–114; Kaufmann, et al., 1999, pp. 1–62; 2002, pp. 12–40; Rodrik, 1999, pp. 385–408; 2003, pp. 10–18; Rodric, et al. 2004, pp. 10–18; Landes, 2000, pp. 12–30; Woolcock, Narayan, 2000, pp. 225–246; Acemoglu, et al. 2001, pp. 1369–1398; Kaufmann, Kraay, 2002, pp. 5–28; Acemoglu, 2008, pp. 11–30). Presently, more attention is paid to the quality of institutions, especially on the macro-economic level (Álvarez-Díaz, Miguez, 2008, pp. 161–167). Few papers deal with the efficiency of institutions (Putnam, 1995, pp. 10–30; Chousa, et al. 2005, pp. 69–81), particularly on a local level. In accordance with the guidelines of NIE, a local government is a formal institution which belongs to organisations and which functions in economy parallel to two other groups of institutions i.e. norms and markets (North, 1984, pp. 7–14).

The most essential area in which public sector organisations are active is the provision of public services. Pursuant to the requirement of public accessibility, these tasks should not be governed by market regulations *sensu stricto*. After all, their overriding aim is not a financial gain but maximisation of social benefits. This implicates the need to finance such type of services from public funds. At the same time, budget constraints currently felt by the entire public administration sector mean that the highest quality services must be provided in the most efficient and profitable manner (*Communication from the Commission*, 2011, pp. 8–17).

Available from 1th of May 2004 EU funds are one of the sources of financing public services. Nowadays, local government units, alongside business entities, are the major beneficiaries of nonreturnable funds originating from the EU budget (Jastrzębska, 2011, p. 18). These funds are dedicated to the construction and modernisation of infrastructure needed for the development of economic, social and cultural, tourist, sport and recreational functions, and to raise the level of education and employment in local communities (Pastuszka, 2012, p. 26). The efforts undertaken by a local government to acquire funds from the EU budget depend primarily on its institutional and programme readiness as well as the budgetary condition which allows the local authorities to secure the required own contribution (Churski, Perdał, Herodowicz, 2016, p. 96).

In this article, the authors have made an effort to verify the hypothesis assuming that there is a dependence between institutional efficiency of local governments and the revenues obtained by municipalities from the EU budget and other foreign programmes (including the contribution from the state budget which is to co-finance projects executed with the inclusion of financial means from structural funds and from the EU Cohesion Fund).

For the sake of our analysis, it was assumed that an efficiently working local government is one which in its pursuit of the aim, such as improvement of the social and economic situation, takes advantage of the endogenic potential to the highest possible degree and applies an optimal combination of various tools to this end. It creates partner-like relations with different groups of stakeholders (entrepreneurs, residents, potential investors, non-government organisations), providing a prompt and professional response to the needs they signal. It formulates goals skillfully, involving the local community in this process, and afterwards, with no undue delay, it makes decisions which lead to the attainment of the defined goals. An efficient local government is also quick at responding to exogenous factors, hence it is able to take full advantage of opportunities and minimise, as much as possible, any threats.

Research methods

This article reports an empirical study, which is based on two types of information – primary data (obtained via surveys) and secondary ones (from the Local Data Bank – LDB[1]). The survey research[2] (a postal one) was conducted at the turn of 2015/2016 among representatives of local governments of all Polish municipalities (2,479). In order to gather all the necessary information, a survey questionnaire was established. It consisted of 50 questions (mostly semi-open-ended ones) and its purpose was to learn about the procedures, organisation of processes, applied tools and their advancement, to assess the effect of implemented activities in the following areas: economic and spatial, financial, administrative, human resources management in municipal offices, provision of social, cultural and educational services. Responses to particular questions were assigned point scores. Sums of points obtained from individual replies and average values of selected statistical indicators (from the LDB) pertaining to municipalities served to calculate values of the efficiency index for each local government studied.

Before starting the proper research, the research tool (as a part of pilot studies) was consulted with representatives of local authorities, as well as the Regional Audit Chamber and the Local Government Appeals Board. During the main survey research, completely and correctly filled surveys were returned by 1,220 respondents (150 from urban municipalities, 770 from rural and 300 from urban-rural), which ensured the return rate of 49.2%. An error of the data obtained from the above sample was 0.02 and a chi-square test indicated a lack of significant differences between the observed distribution (in the sample) and expected distribution (present in the population).

To assess the efficiency of local governments an aggregate metric (EFF) was applied. It is a sum of weighted synthetic partial metrics determined for the basic areas of activity of a local government, i.e. spatial-economic (EFF_1) (weight 0.25), financial (EFF_2) (weight 0.25), administrative (EFF_3) (weight 0.15), human resources management in the council office (EFF_4) (weight 0.20), and provision of social, cultural and educational services (EFF_5) (weight 0.15). The weights assigned to particular sub-areas were determined during interviews with experts, who represented municipal offices, business environment institutions and entrepreneurs. The partial measures EFF_1-EFF_5 were calculated as means of normalised values of 19 variables, which were a combination of primary and secondary data[3]. Before the actual calculations were started, the collected data had been reviewed in terms of discriminatory properties and mutual correlations, and transformed properly. The purpose of these steps was to exclude from the set so-called quasi-constant variables and characteristics which were too strongly correlated with one another, to run stimulations of characteristics of a negative nature (so-called destimulants), and to transform the characteristics to a comparable form through their normalistion.

The verification of the hypothesis presuming a relationship between the level of efficiency of local governments and absorption of EU funds was based on results of one-factor regression analysis, in which the explained

[1] The Local Data Bank (accessible at: https://bdl.stat.gov.pl/BDL/start) is the largest, ordered set of data in Poland providing information about the social, economic, demographic and environmental situation in the country, and describing administration units at all levels of the territorial division of Poland. It offers over 40,000 statistical measures grouped under subject headings according to the research programme in the public statistics area (https://danepubliczne.gov.pl/dataset/bank-danych-lokalnych z 19.07.2017).

[2] Detailed description of the methodological grounds (including the procedure for getting the primary data, information about the questionnaire etc.) together with a list of variables underlying the analysis is available in the research report (http://www.uwm.edu.pl/konferencjakpgir/pliki/raport_z_projektu.pdf).

[3] For the purpose of this article, we excluded from the original set of indicators applied to estimate the institutional efficiency of local government in the financial sector (EFF_2) an averaged (for the years 2007–2013) value of financial means acquired from the EU budget in the total revenues of a municipality due to its strong correlation with the explained variable.

variable was a normalised value of financial means acquired by a local government from the EU and other foreign programmes in total (including the contribution made by the state budget as a co-financing of projects executed with the contribution of financial means from structural funds and from the EU Cohesion Fund), while the explaining variable (depending on a model) was either the synthetic metric of the institutional efficiency of local government (EEF) or the partial metrics EFF_1-EFF_5.[4]

Absorption of the EU funds versus the level of institutional efficiency of local governments

Since Poland's accession to the EU, the Polish local governments have been a rightful participant of the system of European Union funds and, as statistical data confirm, they all take advantage of this opportunity, although to varying extents. The total worth of the funds they acquired in the years 2006–2016 was 75,658.26 million PLN, which constituted 8.66% of the total budgets of Polish municipalities. Nearly 1/5 of this amount was received by the five largest cities in Poland, i.e. Warsaw (8.25%), Gdańsk (3.64%), Łódź (2.87%), Wrocław (2.55%) and Poznań (2.13%), and the remaining amount was distributed unevenly among the other 2,474 municipalities.

The biggest beneficiary of the EU funds were urban municipalities, which received almost 60% of the total resources. In the regional approach, the highest structure index was calculated for the provinces: *mazowieckie* (15.51%) and *śląskie* (13.09%), while the lowest one was found for the provinces: *lubuskie* (2.20%) and *opolskie* (1.62%).

Verification of the research hypothesis was started by preparing a model testing the relationship between the level of absorption of the EU 2006-2016 funds by local governments and their overall institutional efficiency (EFF). The statistically significant result of variance obtained for this dependence ($F(1, 1218) = 93.99$; $p < 0.01$) indicated that the proposed solution was well-fitted to the data and explained more variance of the dependent variable than its arithmetic mean did. The calculations demonstrated a small positive relationship between the analysed variables (beta[5] = 0.27; $p < 0.01$), and the results of the estimation of the regression equation showed that an increase in the institutional efficiency factor of the analysed local governments by 0.1 caused an increase in the revenues from the European Union funds by 0.023. A similar analysis was conducted for each of the areas of institutional efficiency (i.e. economic and spatial, financial, human resources management and provision of social, cultural and educational services). Once again, the analysis produced statistically significant results of variance ($p < 0.001$). The highest correlation (beta = 0.33; $p < 0.01$) was noted in the sphere of social, cultural and educational services (beta = 0.22; $p < 0.01$), it was slightly lower in the domain of HR management in the administrative office of a municipality (beta = 0.21; $p < 0.01$), while a lack of correlation was determined for the financial (beta = –0.10; $p < 0.01$) as well as spatial and economic domains (beta = 0.18; $p < 0.01$). The strongest effect of a change by unit in the efficiency indicator on the increase in the absorption of EU funds by local governments appeared in the domains of HR management ($\beta_1 = 0.59$; $p < 0.01$), and the supply of social, cultural and educational services ($\beta_1 = 0.32$; $p < 0.01$).

In our interpretation of the regression analysis results, it is important to notice that the tested models explained the variability of the dependent variable on a significant, but very low level. With respect to the equation which determined the effect of the overall efficiency of local governments (EFF) on the value of financial resources

[4] The calculations were supported by IBM SPSS Statistics 24.

[5] Standardized beta coefficient assumes values from –1 to 1, and in one-factor regression analysis is interpreted in an identical manner as the Pearson's *r* correlation coefficient.

acquired by local governments, the determination coefficient (R^2) was 7.2%, whereas regarding the impact of the partial factors (EFF_1-EFF_5) it ranged from 1% (the financial domain) to 10.5% (provision of social, cultural and education services).

The impact of efficiency on the level of absorption of EU funds was also analysed from the angle of provinces and types of municipalities. The results of estimations of regression equations are collated in Table 1.

Table 1. Results of estimations of the models for the level of absorption of EU funds including the EFF metric with respect to the provinces and the types of municipalities

Specification	Statistics F	Beta	β_0	β_1	R^2
		Province			
Dolnośląskie	4.81[b]	0.24[b]	–0.09[c]	0.30[b]	0.06
Kujawsko-pomorskie	0.25	0.58	0.00	0.02	0.00
Lubelskie	11.58[a]	0.32[a]	–0.07[a]	0.24[a]	0.10
Lubuskie	1.66	0.21	–0.01	0.07	0.04
Łódzkie	4.86[b]	0.23[b]	–0.74[c]	0.29[b]	0.06
Małopolskie	2.18	0.15	–0.02	0.10	0.02
Mazowieckie	8.43[a]	0.24[a]	–0.01[c]	0.07[a]	0.06
Opolskie	6.53[b]	0.41[b]	0.00[a]	0.02[b]	0.17
Podkarpackie	12.19[a]	0.36[a]	–0.05[a]	0.21[a]	0.13
Podlaskie	13.66[a]	0.43[a]	–0.11[a]	0.41[a]	0.19
Pomorskie	17.53[a]	0.49[a]	–0.33[a]	1.12[a]	0.24
Śląskie	14.62[a]	0.38[a]	–0.06[a]	0.24[a]	0.15
Świętokrzyskie	4.59[b]	0.29[b]	–0.04	0.17[b]	0.09
Warmińsko-mazurskie	15.36[a]	0.46[a]	–0.08[a]	0.28[a]	0.21
Wielkopolskie	7.86[a]	0.26[a]	–0.07[b]	0.24[a]	0.07
Zachodniopomorskie	11.36[a]	0.44[a]	–0.09[a]	0.31[a]	0.19
		Type of municipality			
Urban	34.67[a]	0.44[a]	–0.31[a]	1.00[a]	0.19
Rural	18.75[a]	0.15[a]	0.00[a]	0.01[a]	0.02
Urban-rural	0.78	0.05	0.01[b]	0.01	0.00

a, b, c – denote the significance of a parameter at a level of significance equal 0.01, 0.05 and 0.1, respectively.

Source: own survey.

In the regional approach, a statistically significant result of variance was obtained for most of the provinces except *kujawsko-pomorskie*, *lubuskie* and *małopolskie*, for which the value of *p* exceeded the highest permissible level, i.e. 0.1. In the other regions, the dependence between the efficiency of local governments and the amounts of EU funds they obtained was statistically significant and fell within the range of 0.23 (*łódzkie*) to 0.49 (*pomorskie*). The biggest effect of a unit change in the EEF efficiency measure was noted in the *pomorskie* province, where an increase in the independent variable by 0.1 caused an increase in the dependent variable by 0.112. This region also achieved the highest value of the determination coefficient (R^2) equal 24%.

The analysis which included the type of municipalities yielded a positive result only with respect to urban municipalities and rural ones. Among all the types of local governments, distinctly the strongest relationship between the analysed variables occurred in towns, where the correlation approximated 0.44, and the direction

coefficient β_1 reached 1.00. The model developed for this type of local governments was also distinguished by the highest percentage of variance of the dependent variable explained by the independent variable (R^2 = 0,19).

Conclusions

The considerations presented in this article focused on the verification of the research hypothesis assuming the presence of a relationship between institutional efficiency of local governments and sum of financial means acquired by them from the EU budget and from other foreign programmes (including the contribution of the state budget as co-financing of projects executed with the contribution of resources from structural funds and the Cohesion Fund of the EU). The analyses substantiate the conclusion that there is a weak, positive correlation between the two categories defined above, both on the level of overall efficiency (measured with the EFF metric) and three of the five sub-areas of efficiency (i.e. provision of social, cultural and educational services, HR management in the municipal offices, and administration). On the scale of the research sample, the strength of the relationship between the synthetic EFF metric and normalised value of the EU funds acquired by municipalities was 0.27, whereas in the regional context it ranged from 0.23 in the province *łódzkie* to 0.49 in the *pomorskie*. Moreover, a much stronger relationship was determined in urban municipalities (beta = 0.44) than in rural ones (beta = 0.15).

The research results provide evidence for positive verification of the hypothesis and, what is more important, generate additional information about the analysed dependence. The low values of standardised beta and R^2 statistics suggest that although there is a relationship between institutional efficiency of local governments and the amounts of funds they acquire from the EU, the efficiency of a local government (in the meaning defined in the introduction section) cannot be treated as an exclusive determinant of the absorption of EU funds by municipalities. The number of residents in a municipality as well as the volume of budgetary revenues played a much more important role. The correlation of these categories with the analysed variable was very high, reaching 0.95 ($p < 0.001$) for the former factor and 0.96 ($p < 0.001$) for the latter one.

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NON-FINANCIAL REPORTING STANDARDS AND EVALUATION OF THEIR USE ILLUSTRATED WITH EXAMPLE OF POLISH LISTED COMPANIES

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ABSTRACT

The introduction of the obligation to publish non-financial data has been awaited by stakeholders for a long time. This obligation has been in effect since the beginning of 2017 for selected companies listed on the stock exchange, i.e. Public Interest Entities (PIEs). The paper attempts to assess the current state of non-financial reporting based on the standards used by PIEs in the first year of its validity. The authors attempted to assess the new reporting obligation and put forward the following main hypothesis: Polish listed companies, and in particular, public interest entities are not prepared to implement the provisions of the Accounting Act, which is the transposition of Directive 2014/95/EU. The research provided evidence that the highest percentage of companies reported on the basis of GRI standards and other combinations of GRI, GRI G4, SIN, and more than half of the companies proposed their own principles or did not specify them. The research showed the multidimensionality of actions taken by companies in the context of non-financial reporting.

Introduction

Since 2017, the obligation for listed companies to publish non-financial information in the form of reports or statements has been in effect. This obligation stems from the implementation into the Polish law of Directive 2014/95/EU, which requires certain large public interest entities (PIEs) and capital groups to disclose the extended

scope of non-financial information. Changes in non-financial reporting are the result of evolutionary changes, thus responding to changing needs and expectations of stakeholders.

Literature review

The non-financial reporting means corporate social responsibility. Therefore, it is said that the development of the CSR issue and expansion of literature on the subject around the world took place between the 80s and 90s of the last century. The object of these studies is mainly to present the idea of corporate social responsibility and guidelines for reporting on it e.g. Ernst, Ernst (1976), M. Dierkes, L.E. Preston (1977), S.C. Burchell, C. Clubb, A.G. Hopwood (1985), K.E. Nees, A.M. Mirza (1991), R.H. Gray, J. Bebbington, D. Walters (1993), R.H. Gray, R. Kouhy, S. Lavers (1995), L. Moir (2001), W. Garriga, D. Mele (2004), A. Ms Williams, D.S. Siegel, P.M. Wright (2006), A. Okoye (2009), W. Visser (2010), H. Aguinis, A. Galvas (2012) and empirical research in the field of applied practices and factors influencing the scope and quality of information presented. Among the many authors and studies in this research, it is worth pointing out, among others, to: H.J. Hejase, F. Hashem, Ali Al. Dirani, Z. Haddad, K. Atwi (2017), B. Fernandez-Feijoo, S. Romero, S. Ruiz (2014), R. Hahn, M. Kuehnen (2013), J.E. Morhardt (2010), C.A. Adams (2002), C.A. Adams, W.Y. Hill, C.B. Roberts (1995, 1998), A. Belkaoui, R.G. Karpik (1989), L.E. Preston, F. Rey, M. Dierkes (1978). Studies from the literature of Polish authors, which are worth pointing out, are: M. Rozkwitalska (2006), A. Paliwoda-Matiolańska (2009), M. Marcinkowska (2010), W. Gasparski, A. Lewicka-Strzałecka, B. Rok, G. Szulczewski (2011), A. Herbuś, B. Ślusarczyk (2012), M. Stefańska (2013), B. Bek-Gaik, B. Rymkiewicz (2014), M. Macuda, Ł. Matuszak, E. Różańska (2015), R. Ignatowski, M. Wójcik-Jurkiewicz (2016), D. Jędrzejka (2016), M. Wójcik-Jurkiewicz (2017), E. Gheribi (2017), O. Nosova (2017), M. Wójcik-Jurkiewicz (2018), Ł. Matuszak, E. Różańska (2017), E. Śnieżek, J. Krasodomska, A. Szadziewska (2018).

Method

To verify the paper's hypothesis, annual reports, CSR reports, sustainable development reports, management reports, and other information published by enterprises on their websites were analysed. The study aims at assessing the state of non-financial reporting among Polish listed companies. For this purpose, the method of analysis and deduction was used in the paper. The critical analysis of references and sources was performed, including analyses of national and foreign scientific publications, the EU directive, the Accounting Act, non-legislative documents, and guidelines of auditors and organisations responsible for non-financial reporting initiatives.

Results

The awareness and significance of corporate social responsibility and the concept of sustainable development are constantly growing, and as a consequence, the awareness of the need to report information on the entity's activities in non-financial areas referred to as non-financial reporting. Relevant regulations and recommendations refer to these elements of reports, which are to provide context and supplement to the financial statements. Many regulations, recommendations, and good practices have been developed that support the reporting process in this area, illustrated by an example of the GRI Initiative (Global Reporting Initiative). A list of standards used for non-financial reporting: GRI Standards/GRI G4, Communication on Progress (COP), International Integrated Reporting

Framework, KPI for ESG, Carbon Disclosure Project (CDP), PN-ISO 26000:2012 on social responsibility, EMAS (Eco-Management and Audit Scheme) and Non-Financial Information Standard (SIN).

Table 1 presents a list of the non-financial reporting standards, which include standards, code's, guidelines, indicator's (according to their development date criterion) or recommendations concerning this area, specifically the main areas of such activities, most commonly used in business practice.

Table 1. Historical View of Non-Financial Reporting Guidelines

Year of development	Standard name	Category	Scope	Standard author
1976	OECD	Code	International	Organisation for Economic Co-operation and Development
1977	Tripartite declaration of the ILO	Code	International	Administrative Council of the ILO
1993/1995	EMAS	Environmental management standards	Regional – European	EU Parliament and Council
2000	UN Global Compact	Code	International	Initiative of Secretary General, Kofi Annan
	GRI	Reporting indicator	International	Global Reporting Initiative
2010	ISO 26000	Standard	International	International ISO Standardization Committee
2011	UN "Protect, Respect and Remedy"	Guidelines	International	UN Human Rights Council
2015	GRI Standards/GRI G4	Reporting indicator	International	Global Reporting Initiative
2017	SIN (Non-Financial Information Standard)	Environmental standard	Regional – European	Foundation of Reporting Standards

Source: own study based on: Paszkiewicz, Szadziewska (2011), Samelak (2013); Gasparski, Lewicka-Strzałecka, Rok, Szulczewski (2002), Szadziewska, Spigarska, Majerowska (2018), Mikulska, Michalczuk (2014) Ignatowski, Wójcik-Jurkiewicz (2016), Wójcik-Jurkiewicz (2017), Wójcik-Jurkiewicz (2018), SIN (2017), Matuszak, Różańka (2017).

As far as non-financial reporting is concerned, data presentation method is discretionary. However, to encourage businesses to apply unified non-financial reporting principles, the Global Reporting Initiative (GRI) has created publicly available guidelines (principles, indicators) that businesses can use to measure their economic, social, and environmental performance (Zapłata, Kaźmierczak, 2011, p. 174). Such a framework is intended to ensure comparability and transparency of data.

In accordance with the applicable legal regulations, reporting standards can be selected from among the above mentioned international and EU standards characterised by the different scope of information. According to par. 9 of the Directive, entities covered by these regulations may rely on national frameworks, EU frameworks, such as the Eco-Management and Audit Scheme (EMAS), or international frameworks, such as the UN Global Compact, UN Guiding Principles on Business and Human Rights implementing the UN "Protection, Respect and Remedy" Framework, OECD Guidelines for Multinational Enterprises, the ISO 26000 standard, the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, GRI (Global Reporting Initiative), or other recognised international frameworks. Table 2 presents the areas and principles of non-financial reporting according to the standards indicated in Table 1.

Table 2. Guidelines for Non-Financial Reporting in Accordance with the Applicable Rules

Standard Name	Reporting Areas	Reporting Principles
ISO 26000	Organisational governance Human resources management Good business conduct Consumer issues Human rights Natural environment Community involvement and development	– Presentation of an honest and complete picture of CSR. – Presentation according to the CSR key areas. – Presentation of information: understandable, accurate, objective, and complete
UNGC	Human rights Environmental protection Labour standards Anti-corruption	The clear structure of the report informing about costs and progress in the implementation of the ten principles
EMAS	Environmental management	Clear and complete structure of the report
OECD	Human rights Sustainable development Employment and employment relationships Environmental protection Anti-corruption Protection of consumers' interests	Transparency of information
GRI	In accordance with the principle of materiality, those which have a significant economic, environmental, and social impact and significantly influence the assessment of the enterprise by stakeholders or their decisions	The inclusion of stakeholders – they must be defined, and the manner of the fulfilment of their interests and expectations must be explained. – Sustainable development context – Materiality – Completeness
SIN	Management area – 15 indicators Environmental area – 30 indicators Social and employment area – 78 indicators, three introductory chapters, and five annexes	– Simple layout and structure – Support in determining the materiality of non-financial disclosures – Adaptation to the specific character of Polish listed companies

Source: own study based on Bartkowiak (2011), Lament (2017), Kędzior, Kędzior, Wójcik-Jurkiewicz (2017), Maćkowiak, Svobodová (2017). Wójcik-Jurkiewicz (2018).

Social responsibility is considered to be one of the greatest challenges of the 21st century and plays an increasingly important role in the functioning of many organisations. It is being discussed at length by researchers, both its theoretical (Friedman, 1970; Epstein, Roy, 2001) and empirical (Dahlsrud, 2008; Heslin, Ochoa, 2008) aspects. Corporate Social Responsibility may be understood as making and meeting economic, legal, ethical and discretionary commitments, imposed on a given organization by the parties engaged in its activity (Maignan, Ferrell, Hunt, 1999), or as considering the society's current expectations by the organization in its activity (Commission of the European Communities 2001).

Bearing in mind the non-financial reporting obligation introduced by the Accounting Act, the authors carried out preliminary research, evaluating 167 listed companies (PIEs). Figure 1 presents the results, which confirm the paper's research hypothesis.

STANDARDS	GRI Standards	GRI Standards: Core	GRI G4	GRI G4: Core	GRI G4 extended	GRI G4 Core + industry supplement	GRI Core	SIN	Company's Report	Own rules	undefined	Different solutions	All companies
	8	4	10	7	1	3	4	27	7	38	41	17	167

Figure 1. Readiness of Listed Companies for Non-Financial Reporting

Source: own research based on the Polish Public Interest Entities (PIE's) (as of 31 August 2018).

Figure 1 proves the author's thesis that listed companies were not ready for non-financial reporting. It should be noted that less than 38% of the surveyed companies used the existing standards and guidelines, of which 50% applied the newly developed SIN. The situation is satisfactory for the SIN standard, while other results still prove the lack of readiness of listed companies to report non-financial information, which may serve as a basis for further explorations and research.

In conclusion, the considerations presented in the paper show that the issue of non-financial reporting requires ordering. Research has shown the need for uniform solutions related to non-financial information reporting, with special consideration of the non-financial reporting concept, as it is increasingly recommended and recognised as s good practice in an enterprise (Śnieżek, Piłacik, 2016). On the other hand, the Legislator emphasises that it is not necessary to more precisely specify the shape and direction of development of non-financial reporting in Poland or other EU countries.

Results supply

Since there are no clear procedures related to the implementation of non-financial reporting standards, greater transparency of companies and the comparability of the information presented by them may not be possible.

Results demand

The survey required companies to be ready to prepare a non-financial report, which, obviously required more time and professionalism from the companies. The results expected by the paper's authors were to indicate 2, 3, or even a few solutions, to meet the requirement for transparency and comparability of non-financial data.

Limitations

A significant limitation of the survey was a small sample which resulted from the fact that some companies did not meet the obligation to draw up a non-financial report. Also, the companies decided to select too many standards as appropriate and single.

Conclusions

The analysis of references and the scope of authors' research and other research presented in the paper allowed to verify the research hypothesis, i.e. Polish listed companies, and in particular, public interest entities are not prepared to implement the provisions of the Accounting Act, which is the transposition of Directive 2014/95/EU. It should be noted that a non-financial report is related to the strategy of operation and the organisation management system while fulfilling the legislative obligations.

The authors are fully aware of the limitations of the research, for instance, because of its initial nature and the small sample of only 167 listed companies (PIEs) surveyed in the first year of the new regulations.

The presented facts allow us to conclude that both in qualitative and quantitative terms, non-financial reporting is at the development stage in Poland. The next big challenge for the authors will be to attempt to build an index determining the level of non-financial reporting in Poland.

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