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CONDITIONS OF COOPERATION BETWEEN ENTERPRISES AND BUSINESS ENVIRONMENT INSTITUTIONS USING THE PODLASIE REGION AS AN EXAMPLE

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ABSTRACT

Cooperation in the field of innovation activities means active participation in joint projects with other companies and business environment institutions. Some of these institutions are involved in cooperation with entrepreneurs to a very limited extent, which makes the help ineffective.

The aim of this article is to define the impact of this kind of cooperation in in the context of innovation development in the Podlasie region. According to the author of this article, the research problem is the low level of cooperation between companies and institutions of the business environment. There are not many publications regarding the identification of the degree of readiness to cooperate by companies in the regional context.

The article uses the method of critical analysis of literature and statistical analysis of data. The results show the degree of interest in taking up cooperation between entities. Aiming to improve the level of cooperation, a more proactive and specific approach of the business environment institutions is recommended.

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KEY WORDS

cooperation, business environment institutions, innovation, entrepreneurship

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INTRODUCTION

Under contemporary performance conditions, companies are not able to implement significant innovations. Innovations rarely occur in isolation, as they constitute a highly interactive process of collaboration in a growing and diverse network of stakeholders. Companies aiming to develop new technologies, products, and services are forced to learn from multi-

ple sources and establish contacts with several external partners. Cooperation becomes a tool for the expansion of the scope of development projects and a way for building competences in the company. Supporting entrepreneurship and innovation processes includes the provision of specific services and development of economic-social environment favourable to entrepreneurs and conducive to inde-

pendent business (Pietruszewska-Cetkowska & Zygmunt, 2014, p. 8; Hillebrand & Biemas, 2003). Activities in this regard include establishment and development of specialized support institutions.

A literature review indicated the presence of several research trends in the research of business environment institutions. A diversified scale and scope of on-going research demonstrate the importance of the studied subject and confirm the existence of research gaps in this area. Today, studies of national and regional range can be distinguished, mostly relating to the situation in individual provinces. Some of the factors that can positively affect a high inclination to cooperate by companies from one area do not have to be as important for actors at the other end of the country or the community of regions. Research carried out at regional levels seem to be important for this (Szostak, 2008).

Although, among the available Polish studies there are reports on these issues at the national level, there is a small number of analyses regarding the individual provinces, including the Podlaskie province, which takes one of the last places in innovation rankings. This situation shows the importance of cooperation between companies and business environment institutions, local government units, research and development institutes (R&D) for regional development. Business environment institutions (BEI) offer entrepreneurs the assistance in the formation, operation, and development of companies. For research purposes and this article, it was assumed that the institutions from the business environment are non-profit organisations that do not work for profit. The identification of barriers to cooperation between the spheres of business is important from the point of view of measures to be taken in order to overcome the difficulties (*Bariery ...*, 2006; Gnyawali et al., 2006).

The business environment institutions are the important elements of the efficient innovation system. They support companies and facilitate the flow of knowledge and technology between science and businesses entities. These institutions strongly complement the contemporary logic of building the competitiveness of companies and socio-economic development of regions. They are such organisations whose activity is significant because of the direct contacts with local entrepreneurs. The cooperation of business environment institutions would enable presenting coherent and comprehensive services of business environment institutions to investors, as well as strengthening regional institutions in the

domestic market (Leight & Blakley, 2013; Patel et al., 2012).

The goal of this article is to present the results of studies, which consider factors affecting the level of cooperation between companies and the institutions of the business environment, in the context of implemented innovations in the Podlasie region. The methods of critical literature analysis and statistical analysis of data have been used. The results were derived from a study on industrial and construction companies in the north-eastern Poland.

1. LITERATURE REVIEW

The company development is determined by various factors associated with the entrepreneur in person, internal resources of the company, and the environment, in which the enterprise operates. With the development of globalization, we can see the simultaneous occurrence of cooperation and rivalry between companies (Cygler & Soroka, 2016). Modern company development processes increasingly take place in a specific system of mutual network interconnections. These include networks of enterprises, research institutions, non-government organisations, public administration, and civil initiatives, which facilitate the penetration of ideas and exchange of information. The cooperation between companies is becoming increasingly important, and network organisations are a common form of functioning in the business world (Sroka & Cygler, 2014). The specificity of cooperation development in the last two decades was the creation of cooperation between competitors rather than vertical cooperation or integration (Cygler, 2009).

Literature defines cooperation as a relationship, in which individuals, groups, and organisations interact with each other by sharing or transferring complementary skills and resources, and their development to achieve benefits on both sides (Gnyawali & Madhavan, 2006). Cooperation is an action that involves coordination of partial tasks resulting from the division of work or from the links between economic entities based on concluded contracts, agreements that prevent or facilitate the execution of specific tasks (Połomska-Jasieniowska, 2010). The ability to create collaboration between businesses may lead to future joint problem solving, joint control over processes, and mutual learning. A large part of alliances fails to achieve both the goals and the assumed bene-

fits by the cooperating companies (Kale & Singh, 2009; Lunnan & Haugland, 2008; Das & Teng, 2000; Keasler & Denning, 2009).

The main tasks of the business environment relate to a variety of activities aimed at increasing creativity, entrepreneurship, and innovation. This leads to a more efficient use of regional and local growth factors. Different motives for innovation implementation by companies are presented in the economic literature. One of the most important is to create a competitive advantage of both cost and the company's proposal resulting from differentiation (Porter, 1998; Tu et al., 2014; Nurullah et al., 2012). This is possible thanks to innovations introduced in various functions of the company as well as in the sphere of relations with partners. The concept of innovation includes both the effect and the process, due to which it is possible to achieve this effect. In management practice, the motifs for innovation should, therefore, be included in the form of objectives that would be the effects of the innovation process.

The development and absorption of innovations constitute the key elements of the policy of economic and social cohesion (Barska, 2014). Polish companies rarely undertake to carry out research and development activities. The value of the EBRD index remains at a low level (0.43% of GDP in 2014), (Działalność ..., 2015). We can observe a low percentage of Polish companies engaged in innovation activities. The total number of innovative enterprises in technological and non-technological innovation situates Poland on the last places (Zadura-Lichota, 2015). The increase in innovativeness of Polish enterprises is necessary to improve their competitiveness in the market (Ejdys et al., 2015). The role of regions has been growing in recent years because of the European Union policy, and this increases the importance of regional conditions in the development of enterprises. The regional environment includes entities supporting economic activity, entrepreneurship, and innovation. Support instruments are offered by the business environment institutions including centres of entrepreneurship support, organisations of entrepreneurs, service

companies, and financial institutions (Lisowska, 2013, p. 192).

Support offered by institutions of the business environment usually covers the following areas (Lisowska, 2014, p. 14):

- activation of academic entrepreneurship and cooperation between science and business;
- improvement of company management and better use of resources;
- establishing contacts with foreign partners;
- information and advisory activities;
- establishing cooperative relations with large companies;
- providing or facilitating the acquisition of financial support;
- encouraging entrepreneurs to organise themselves into producer or distribution groups and create a system of cooperation and subcontracting;
- improving the competitiveness through absorption and implementation of new technologies;
- technology transfer and providing pro-innovation services.

Business environment institutions affect mainly local and regional environment outside the company. They form a support infrastructure that can be

Tab. 1. Types of support offered by business environment institutions

SUPPORT OFFERED BY BUSINESS ENVIRONMENT INSTITUTIONS		
FINANCIAL	NON-FINANCIAL	
	"HARD"	"SOFT"
provided by any type of loan, guarantee funds, non-refundable grants, organisations acting as managers of aid for the SME sector	provided by entrepreneurship and innovation incubators, science and technology parks and industrial parks; in the form of offers for office space, buildings or land with all the appropriate services connected	offered by, among others, advisory and training institutions as well as technology transfer centres; it includes mainly information service, consulting, educational activities (training, workshops), cooperative interaction (exchange offers cooperation or technology)

Source: author's elaborations based on (Markiewicz, 2010, p. 35).

divided into few types (Tab. 1).

The latest paper presenting data on the number and spatial distribution of business environment institutions in Poland is the PARP report "Innovation centres in Poland". The results of this study indicate that in 2014, Poland had 176 active innovation centres and business incubators (including 130 innovation centres). In Podlaskie, five innovation centres and business incubators were identified in the PARP report. This ranks the region on the penultimate place

in the country, one position higher than the Opolskie province. Most centres are located in the southern provinces of Poland: Śląskie – 23, Małopolskie – 20, and Dolnośląskie – 17 (Bąkowski & Mażewska, 2014, p. 14).

The Podlaskie province is characterized by low saturation of BEI, and their offered support is not fully adequate to the needs reported by entrepreneurs. Professionalization of BEI should translate into an increase in the ability of the SME sector to participate in the processes of growth and thus increase the transfer of knowledge, innovation, and technology. In the poorly developed region with a low level of entrepreneurship, such as Podlaskie region, it is necessary to further develop the BEI operating in support of initiation and incubation of companies as well as those strengthening the existing businesses by providing capital in the early stages of operation (*Zapotrzebowanie ...*, 2015).

2. RESEARCH METHODS

The further part of this article presents some results of research carried out as the international research project, conducted under the agreement between the Polish Academy of Sciences and the National Academy of Sciences of Belarus in 2014-2016 “Readiness of enterprises to create cross-border networking”. Quantitative research carried out in the late 2014 and early 2015 covered 381 Polish companies of industries leading in the Podlaskie province. The main goal of the research was to examine the relationships between business entities and the institutions of the business environment in the perspective of innovation development in the Podlaskie province. The survey was addressed to the owners or members of senior management and the paper was limited to the analysis of chosen results.

As a result of the literature analysis and on-going discussions, the factors shaping cooperation between the operators have been determined. It should be noted that the study was not of a representative nature. In respect of the conducted analysis, the results cannot be generalized to the entire population. The purposeful selection was used, limiting the research to specific entities, whose opinion may be authoritative and most desirable. Considering the literature, it was assumed that taking certain forms of cooperation with business environment institutions can increase the chances of positive implementation

of innovation. The construction of the research questions included the importance of different reasons for the willingness to start cooperation between competitors. In addition, the impact of various factors on decisions about potential cooperation in implementing joint projects was considered. In this part of the study, the attention was first of all focused on the factors of a strategic nature, which have an impact on various aspects of making decisions about getting engaged in joint projects.

Defining the strategic factors for particular sectors has allowed for the identification of areas of potential cooperation and the importance of these factors for the development of technological entrepreneurship.

The research problem was formulated in the form of the following questions:

- How do respondents assess the current level of cooperation between the studied companies and institutions of the business environment?
- What is the degree of interest of the studied companies in strengthening the cooperation with institutions of the business environment in the near future?
- To what extent do the individual factors influence the current level of cooperation between the respondent companies with business environment institutions?
- To what extent may positive changes in various factors contribute to the improvement of cooperation in the near future?
- Is there a correlation between the assessment of the areas of existing cooperation and the evaluation of possibilities for improving it in the future?

The results of the survey were coded, and primary data obtained was subject to organising, grouping, and analysis using statistical tools such as the tabular form of data presentation, descriptive statistics, and nonparametric statistics. The analysis was performed using the statistical package STATISTICA, version 12.5.

The following areas of cooperation were evaluated:

- The possibility of joint research and development projects;
- Access to research centres/research infrastructure;
- Access to financial institutions and support programs;
- Consultation/Business Consulting;
- Commercialization of research results;
- Access to databases;
- Help in business development;

- Assistance in technology transfer;
- Past experience with cooperation.

The Desk Research analysis was applied for realization of the objectives. As a result of the literature analysis and on-going discussions, the factors shaping cooperation between enterprises and institutions of the business environment were determined in the context of strengthening the development of innovations. Based on the available statistical data and source materials, the analysis was carried out regarding factors affecting the level of cooperation. Identification of factors affecting the establishment of cooperation was based on the analysis of literature (Strzyżewska, 2011; Górczyński, 2006; Bengtsson & Kock, 2014; Ford & Håkansson, 2013). It also resulted from discussions with experts representing both academia and business. The respondents assessed the phenomenon on a seven-point scale, where 1 meant the complete lack of impact and 7 – a very big impact. The following statistical measures were used to interpret the results of the research: measures of the central tendency – the dominant, mean, and median, and the measure of dispersion – the coefficient of variation. The Spearman's rank correlation was used to indicate the strength of interdependence between the assessments, and with t-Student test, its significance was examined. To identify statistically significant differences between assessments of companies, the U Mann-Whitney test was used.

In the group of industrial companies, the highest participation of respondents per company size, was among small and middle companies (40.33%). In the construction sector, the biggest group of respondents per company size, were middle companies (30.26%). Small and medium-sized enterprises together represented 67,34% of respondents from the industry and 65.79% of respondents from the construction sector. Most companies have existed on the market for more than ten years (77.05% of industrial companies and 63.16% of construction companies). They are, therefore, well-established companies, although the majority of them are still in the group of small and medium companies (Tab. 2). It was assumed that certain forms of cooperation between companies and the institutions of the business environment could increase the propensity for development of innovative activities. It may, therefore, be beneficial to the development of entrepreneurship in the individual

entities within the framework of cooperative relations.

The cooperation in different types of structures can increase the effect of mutual support by providing options in the form of the potential of other companies. The research questions included the importance of different conditions for the willingness

Tab. 2. Characteristics of the studied companies

COMPANIES	INDUSTRIAL COMPANIES N (%)	CONSTRUCTION COMPANIES N (%)
SIZE OF THE STUDIED COMPANIES (NUMBER OF EMPLOYEES)		
Up to 9 people	65 (21.31%)	20 (26.32%)
10–49 people	123 (40.33%)	23 (30.26%)
50–249 people	83 (27.21%)	27 (35.53%)
250 people and more	34 (11.15%)	6 (7.89%)
AGE OF THE STUDIED ENTITIES (NUMBER OF YEARS ON THE MARKET)		
Up to 1 year	2 (0.66%)	1 (1.31%)
1–3 years	16 (5.24%)	12 (15.79%)
4–10 years	52 (17.05%)	15 (19.74%)
More than 10 years	235 (77.05%)	48 (63.16%)

to undertake cooperation between companies and the institutions of the business environment. Defining the key factors led to the identification of potential cooperation spheres and the importance of these factors for the development of innovations.

3. DISCUSSION OF THE RESEARCH RESULTS

In terms of the evaluation of conditions for innovation development in the construction and industry companies operating in the Podlaskie province, an important element of the study was the question of the assessment of the current level of cooperation and the degree of interest to increase it in the future. The researched companies were asked for self-evaluation through the prism of the indicated factors on the seven-point scale (Tab. 3).

Respondents assessed the level of the existing cooperation between their companies and the institutions of the business environment and gave it a rather low ranking. The ranking was higher in the case of industrial enterprises, where the dominant and the median were ranked at 3 and 4. It is surprising because in the case of construction business it is often

Tab. 3. Current and future cooperation with business environment institutions in the opinion of respondents

SPECIFICATION	\bar{X}	ME	D	N _b	V
Industrial companies					
Construction companies					
Declared level of cooperation with business environment institutions	3.12	3,00	3	77	48,95
	2.84	3,00	1	18	53,61
Degree of interest in strengthening the cooperation within the next 2-3 years	3.69	4,00	4	65	44,29
	3.68	4,00	3	21	40,43
Correlation of Spearman's rank ($p < 0.05$)					
Assessment of the current level of cooperation and possibilities of its strengthening in the future				0.630760	
				0.646695	

required to establish cooperation with other institutions for investments. This situation can be explained by the fact that for decades, political, social, and economic conditions were unfavourable for collaboration and cooperation in any area of the public sphere, and the dominant attitude – natural in the reality ruled by a repressive apparatus of power – was great precaution, egoism, and low confidence in contacts with others (Wasiluk, 2013; Tomaszuk, 2016). Little optimism can also be observed in assessing the level of interest of the companies in cooperation with the institutions of the business environment in the near future. In the case of both groups of companies, poor differentiation of the respondent assessments can be observed, although, in the case of industrial companies, it is slightly higher for the current state.

Conducted Spearman's rank correlation indicates a high dependency between the assessment of current cooperation and the possibility of strengthening it in the near future. The higher the companies assessed the current level of contacts with the institutions of the business environment, the higher level of readiness for its strengthening in the future they demonstrated in their declarations. The increase in the evaluations of the current level of cooperation is accompanied by a significant increase in the degree of interest in strengthening this cooperation in the next 2-3 years. The increase of interest in the strengthening of cooperation may be affected by its results so far, felt directly and indirectly by cooperat-

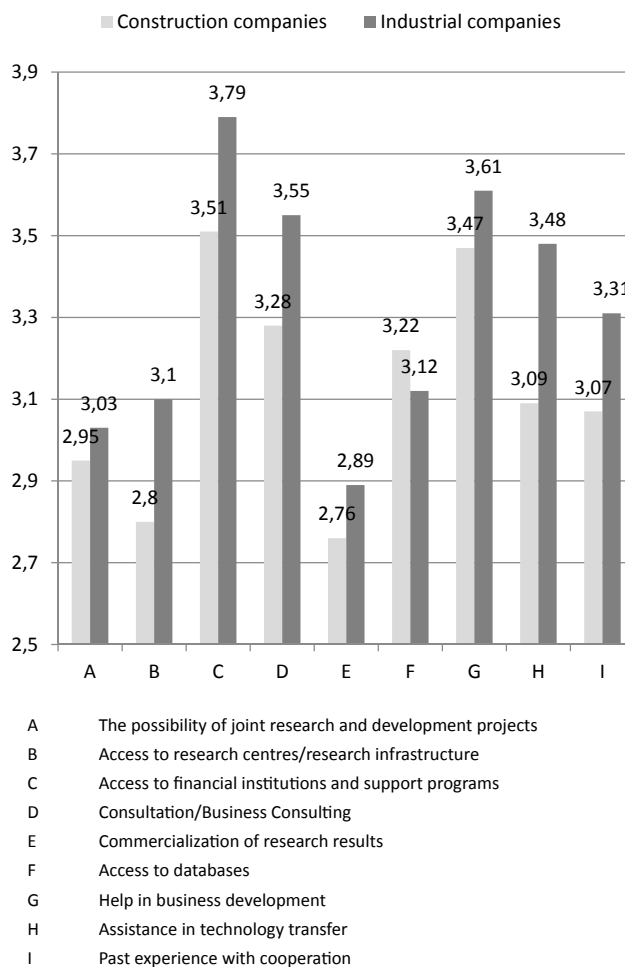


Fig. 1. Average rating of the impact of various factors on the level of existing cooperation

ing entities. This depends largely on mutual expectations and the expected and actually received benefits from the cooperation.

Considering the earlier analyses of the discussed issues, conducted by the author of this text in frames

of other projects (Wasiluk & Daniluk, 2013), it appears that companies in Podlaskie focus on immediate actions that allow for survival and achievement of even a slight increase. Identified were the interacting factors that constitute the mechanism of cooperation between companies and the business environment institutions.

Examined was also the extent, to which various factors affect the evaluation of the current level of cooperation between the respondent companies and the institutions of the business environment. The results are shown in Fig. 1.

Analysing the average values, we can notice that there are no indications of above 4. The higher notes apply to aspects of cooperation related to the access to financial institutions and support programs, business consulting and help in business development for both construction and industrial companies. These are the areas that do not require a mutual commitment to business cooperation. Low ratings in areas that have a particularly significant impact on the development of entrepreneurship in the framework of joint actions can raise anxiety about the mechanisms of cooperation. The indicated evaluations might suggest a lack of willingness on the part of companies to engage in deeper cooperation relationship, characterized by engaging their own resources.

Fig. 2 shows the results of examination of the positive changes in the identified areas of cooperation to its improvement in the near future.

In the opinion of respondents from the construction sector, the positive changes in the access to financial institutions and support programs, business consulting and help in business development have again had the greatest impact on the improvement of cooperation of their businesses with the business environment institutions. Whereas little effect was made by the changes in the area of commercialization of research results, past experience with cooperation and access to databases. Companies in the Podlaskie province do not trust their potential partners and are afraid of losing

technology, customers, and employees. A small percentage of entrepreneurs in Podlaskie province confirmed the use of the BEI offer in the past. Those who engage in cooperation, do it sporadically. Entrepreneurs do not undertake cooperation with BEI because they fail to see the benefits of such cooperation.

These conclusions are largely consistent with the results of other studies conducted in selected provinces (Kamińska, 2011; Bąkowski & Mażewska, 2014; Pietruszewska-Cetkowska & Zygmunt, 2014). These institutions specify their offer, but do not make the effort to get to know well a potential customer and, thereby, the offer often reaches an accidental recipient. Therefore, the promotion of BEI services is ineffective, and messages targeted to entrepreneurs are incomprehensible. To change this, the information activities promoting BEI services should be given in the language of business benefits. Often, information on the scope of BEI activities does not reach potential

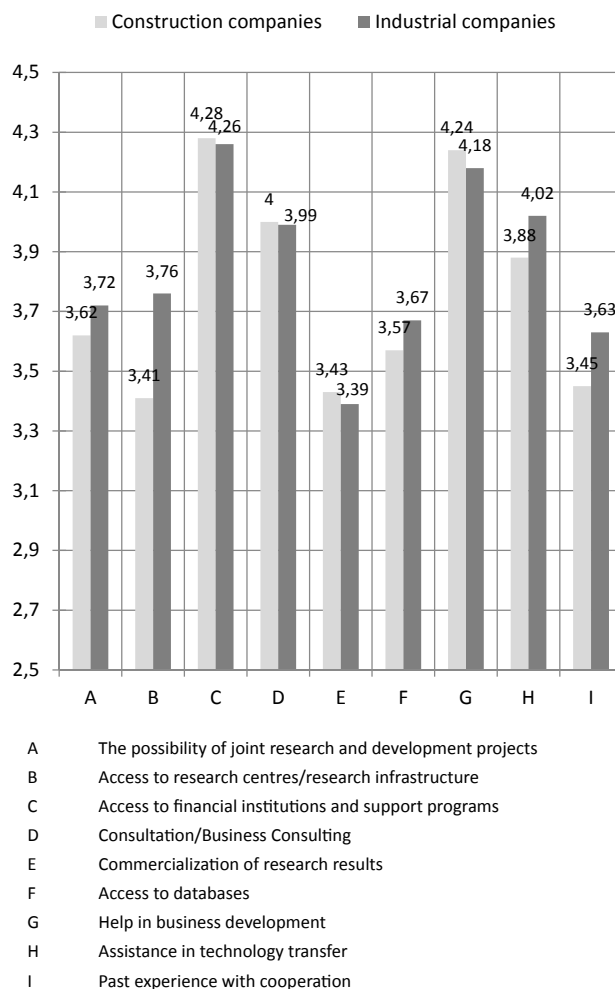


Fig. 2. Average rating of the impact of positive changes in various factors on the degree of strengthening cooperation in the near future (2-3 years)

recipients of services, due to the excessive amount of information. The average entrepreneur is not able to select independently the most valuable information that would allow him to cooperate with the BEI and other entities. Entrepreneurs also point to the excessive level of generality and the lack of specialist offers addressed to representatives of specific industries. Therefore, elimination of services targeted at a mass recipient is recommended, reallocation of resources in the areas that need the most support and personalization of the offer.

There is a high positive correlation between the assessment of the impact of various factors on the existing cooperation and the evaluation of the possi-

to strengthen it in the near future. Although the analysis pointed to areas, in which cooperation exists most often, and where the positive changes have an impact on the strengthening of cooperation in the future, it should be noted that the influence of these factors did not exceed level 4 on the seven-point scale for the current cooperation. Therefore, their power to affect the readiness of companies to cooperate with the institutions of the business environment should be assessed as rather weak. The results are not optimistic.

Companies do not recognize the need for cooperation and show no awareness of the benefits of cooperation. There is no clear will for cooperation among entrepreneurs, and they lack the sense of common purpose for the development. Entrepreneurs expect mainly tangible economic benefits from cooperation. A possibility of expansion into new markets and the improvement of their product and service quality are also viewed as important. Entrepreneurs believe that cooperation with institutions of the business environment could be better and more efficient. They do not benefit fully from what the existing institutions offer. Some business environment institutions are involved in cooperation with entrepreneurs to a very limited extent, which makes their help ineffective. They mostly provide

Tab. 4. Spearman's rank correlations for the impact of various factors on the existing level of cooperation and the possibility of improving it in the future resulting from positive changes in the factors

FACTORS	CORRELATIONS OF SPEARMAN'S RANKS	
	INDUSTRIAL COMPANIES	CONSTRUCTIONS COMPANIES
The possibility of joint research and development projects	0.705	0.771
Access to research centres/research infrastructure	0.677	0.720
Access to financial institutions and support programs	0.685	0.674
Consultation/Business Consulting	0.662	0.677
Commercialization of research results	0.701	0.646
Access to databases	0.669	0.647
Help in business development	0.655	0.681
Assistance in technology transfer	0.690	0.644
Past experience with cooperation	0.748	0.793

bility of improving it in the future, in both construction and industrial companies (Table 4).

Spearman's rank correlation conducted for the respondent assessments leads to the conclusion that the increase in the level of evaluation of the impact of individual factors on the current level of cooperation is accompanied by an increase in the average value of the evaluation level of the impact of positive changes in these factors on the establishment of cooperation in the future.

CONCLUSIONS

The carried out analyses show some deficit in terms of both the existing cooperation and readiness

general information and carry out general training. They have nothing to offer for specialized services, and if they do, the services are very difficult to access due to a large number of applicants. Poor cooperation between business environment institutions and other participants in the regional innovation scene is a barrier to the creation and functioning of the regional innovation system. The necessity for commitment and cooperation of numerous actors of the innovation processes is largely due to the specific nature of these processes, their interactivity, and penetration of many branches of knowledge.

Initiating and strengthening cooperative activities between the actors of the regional innovation scene should be one of the main tasks of the institutions and consequently lead to the formation of cooperation networks. There should be a closer

cooperation between business environment institutions and integration of numerous centres from the whole region on the collaboration platform, and stronger cooperation with local government units. Cooperation with business environment institutions should be improved, especially at the local level, through inviting them to and engaging in joint projects. This cooperation may take many forms, including: consulting, professional consultations, promotion of municipalities (city, county, sub-region), common organisation of trade fairs, trade missions, other assistance in establishing business contacts, public-private partnership projects, etc.

We can see the lack of cooperation between BEI. The crucial role in this regard can be played by provincial governments. These units, using funds from the Regional Operational Programmes, can initiate and supervise the implementation of major initiatives for connecting BEI, R&D, and entrepreneurs. Only cooperation on many levels, focused on comprehensive support for entrepreneurs and in cooperation with BEI can bring positive effects resulting in the increase in the competitiveness and innovativeness of the economy.

The establishment of structures for the cooperation with companies, for example, in the context of regional and local production organisation systems, would better respond to the needs of entrepreneurs. Creating more effective programmes to support entrepreneurship, innovation, and development of small and medium businesses at the national, regional, and district levels, based on the past experience and the needs of the target groups, should support innovation and entrepreneurship centres in smaller towns, where the number of potential customers does not allow for financial self-sufficiency. The cooperation of the centres at the regional level must be stimulating in the framework of regional innovation systems that form networks of cooperation between the administration, research institutions, and centres of innovation and entrepreneurship.

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LITERATURE

- Bąkowski, A., & Mażewska, M. (Eds.). (2014). *Ośrodki innowacji w Polsce (z uwzględnieniem inkubatorów przedsiębiorczości). Raport z badania 2014 [Innovation centers in Poland (including business incubators). Research Report 2014]*. Warszawa: PARP.
- Bariery współpracy przedsiębiorców i ośrodków naukowych. Raport.* (2006). [Barriers to cooperation between entrepreneurs and science centers. Report]. Warszawa: Ministerstwo Nauki i Szkolnictwa Wyższego, Departament Wdrożeń i Innowacji.
- Barska, A., (2014). *Regionalne aspekty gospodarki [Regional aspects of economy]*. Warszawa: PWE.
- Bengtsson, M., & Kock, S. (2014). Coopetition – Quo Vadis? Past accomplishments and future challenges. *Industrial Marketing Management*, 43(2), 180-188.
- Cygler, J., & Sroka, W. (2016). The Boundaries of Coopetition: A Case Study of Polish Companies Operating in the High-Tech Sector. In J. Ateljević, J. Trivić (Eds.). *Economic Development and Entrepreneurship in Transition Economies*, (pp. 253-269). Springer International Publishing.
- Cygler, J. (2009). *Kooperacja przedsiębiorstw. Czynniki sektorowe i korporacyjne [Cooperation of companies. Sectoral and corporate factors]*. Warszawa: Oficyna Wydawnicza SGH w Warszawie.
- Das, T. K., & Teng, B. (2000). Instabilities of Strategic Alliances: an Internal Tensions Perspective. *Organization Science*, 11, 77-101.
- Działalność innowacyjna przedsiębiorstw w latach 2012-2014 [Innovative activities of companies in years 2012-2014]*. (2015). Warszawa: GUS.
- Ejdys, J., Ustinovicus, L., & Stankevičienė, J. (2015). Innovative application of contemporary management methods in a knowledge-based economy – interdisciplinarity in science. *Journal of Business Economics and Management*, 16(1), 261-274.
- Ford, D., & Håkansson, H. (2013). Competition in business networks. *Industrial Marketing Management*, 42, 1017-1024.
- Gnyawali, D. R., Madhavan, J., & He, R. (2006). Impact of co-opetition on firm competitive behaviour. An empirical examination. *Journal of Management*, 32(4), 507-509.

- Górzyński, M. (Ed.). (2006). *System wspierania grom przedsiębiorczości. Publikacja podsumowująca [System wspierania grom przedsiębiorczości. Publikacja podsumowująca]*. Rzeszów: IG WSiIZ.
- Hillebrand, B., & Biemas, D. (2003). The relationship between internal and external cooperation: Literature review and proposition. *Journal of Business Research*, 56, 9-10.
- Kale, P., & Singh, H. (2009). Managing Strategic alliances: What Do We Know, and where Do We Go From Here? *Academy of Management Perspectives*, 23, 45-62.
- Kamińska, A. (2011). Wpływ instytucji otoczenia biznesu na rozwój małych i średnich przedsiębiorstw w regionie lubelskim [The impact of business environment institutions for the development of small and medium-sized enterprises in the lubelskie region]. *Barometr Regionalny*, 1(23), 53-65.
- Keasler, T. R., & Denning, K. C. (2009). A Re-examination of corporate Strategic Alliance. New Market Responses. *Quarterly Journal of Finance and Accounting*, 48, 21-40.
- Leigh, N. G., & Blakely, E. J. (2013). *Planning Local Economic Development. Theory and Practice*. Fifth Edition. London: SAGE Publications.
- Lisowska, R. (2013). *Zarządzanie rozwojem małych i średnich przedsiębiorstw w obszarach zmarginalizowanych [Managing the development of small and medium-sized enterprises in the marginalized areas]*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.
- Lisowska, R. (2014). Wsparcie rozwoju małych i średnich przedsiębiorstw przez instytucje otoczenia biznesu na przykładzie usługodawców logistycznych w województwie łódzkim [Support the development of small and medium-sized enterprises by the business environment on the example of logistics service providers in the Lodzkie voivodeship]. *Ekonomia i Zarządzanie*, 6(2), 11-23.
- Lunnan, R., & Haugland, S. A. (2008). Predicting and Measuring Alliance Performance: a Multidimensional Analysis. *Strategic Management Journal*, 29, 545-556.
- Markiewicz, J. (2010). Koncepcja funkcjonowania instytucji otoczenia biznesu w aspekcie wspierania innowacyjności sektora MSP w województwie zachodniopomorskim [The concept of business environment institutions in terms of innovation support SMEs in zachodniopomorskie voivodeship]. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Ekonomiczne Problemy Usług*, 48, 33-44.
- Nurullah, G., Nihat, A., & Öykü, N. İ. (2012). A Conceptual Model Proposal for Determinants, Form, Functions and Structure Choice in Strategic Alliances. *Procedia Social and Behavioral Science*, 58, 1594-1600.
- Patel, H., Pettitt, M., & Wilson J. M. (2012). Factors of collaborative working: A framework for a collaboration model. *Applied Ergonomics*, 43, 1-26.
- Pietruszewska-Cetkowska, I., & Zygmunt, S. (2014). *Model działania Instytucji Otoczenia Biznesu stymulujący proinnowacyjną współpracę przedsiębiorstw w województwie kujawsko-pomorskim [Model of Business Environment Institutions operations stimulating pro-innovative cooperation of companies in Kujawsko-Pomorskie Province]*. Toruń: Toruńska Agencja Rozwoju Regionalnego S.A.
- Połomska-Jasieniowska, A. (2010). Wewnętrzne uwarunkowania współdziałania gospodarczego małych przedsiębiorstw [Internal conditions for economic cooperation between small enterprises]. In M. Matejun (Ed.). *Wyzwania i perspektywy zarządzania w małych i średnich przedsiębiorstwach [Challenges and perspectives of management in small and medium-sized enterprises]*, (pp. 279-295). Warszawa: C.H. Beck.
- Porter, M. E. (1998). *The Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.
- Sroka, W., & Cygler, J. (2014). Pathologies in inter-organizational networks. *Procedia Economic and Finance*, 12, 626-635.
- Strzyżewska, M. (2011). *Współpraca między przedsiębiorstwami. Odniesienie do polskiej praktyki [Cooperation between companies. Reference to Polish practice]*. Warszawa: Oficyna Wydawnicza SGH.
- Tomaszuk, A. (2016). Stereotypes in the perception of cross-border business partners (on the example of Podlasie entrepreneurs). *Ekonomia i Zarządzanie*, 8(2), 55-62.
- Tu, C., Hwang, S. H., & Wong, J. Y. (2014). How does cooperation affect innovation in micro-enterprises? *Management Decision*, 52(8), 1390-1409.
- Wasiluk, A. (2013). Zaufanie i współpraca pomiędzy przedsiębiorstwami w perspektywie budowy i rozwoju struktur klastrowych [Trust and cooperation between companies in the perspective of cluster structures formation and development]. *Ekonomia i Zarządzanie*, 5(4), 49-66.
- Wasiluk, A., & Daniluk, A. (2013). *The possibilities of creating cross-border clusters*. Vilnius: Vilnius University Publishing House.
- Zadura-Lichota P. (Ed.). (2015). *Innowacyjna przedsiębiorczość w Polsce. Odkryty i ukryty potencjał polskiej innowacyjności [Innovative entrepreneurship in Poland. Discovered and hidden potential of Polish innovation]*. Warszawa: Polska Agencja Rozwoju Przedsiębiorczości.
- Zapotrzebowanie przedsiębiorstw na usługi świadczone przez instytucje otoczenia biznesu w regionie podlaskim. Raport. [The demand of enterprises for services provided by business environment institutions in the Podlasie region. The report]*. (2015). Białystok: Urząd Marszałkowski Województwa Podlaskiego. Departament Rozwoju Regionalnego.