

THE ROLE OF STAKEHOLDERS IN THE ENTREPRENEURIAL DISCOVERY PROCESS

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Abstract. The effectiveness and efficiency of the entrepreneurial discovery process is a complex issue and requires close cooperation, participation and involvement of all interested parties. The essence of the process is to establish and strengthen contacts between various groups of stakeholders in innovation ecosystem for the better management of intelligent development, generating and implementing innovation and increasing value added. The article presents part of the research results on entrepreneurial discovery process conducted by a team of Central Mining Institute commissioned by the Silesian Voivodeship, which included the practical implication of the prepared model of the entrepreneurial discovery process that facilitates the acquisition and interpretation of data on expectations and conditions for the region's innovative development.

Keywords: entrepreneurial discovery process, innovation, innovation policy.

1. Introduction

The issue of the entrepreneurial discovery process (EDP) at the national level was widely presented in a report prepared by the World Bank at the request of the Ministry of Development entitled: Toward an innovative Poland: the entrepreneurial discovery process and business needs analysis (W kierunku..., 2015). The main objective of the World Bank's work was to achieve a situation in which the improvement of efficiency and the setting of investment priorities would be determined by mechanisms consisting in a bottom-up process of identifying the demand, needs and potential of enterprises and allowing entrepreneurs to have a say on innovation policy. Thus, the World Bank provided a set of techniques and methods included in a coherent and comprehensive model that engages the spheres of: economy, science, public administration and civil society in contributing to innovation policy and setting priorities for public intervention. This model is called the entrepreneurial discovery process, and its result is the adjustment of public support instruments to the real

needs of Polish enterprises. The model is based on the general scheme of entrepreneurial discovery processes and uses the following tools in its implementation:

- direct interviews with the managers of small and medium-sized enterprises which are supposed to help identify the real sources and barriers of innovation, which are impossible to discover using standard questionnaires,
- Smart Labs, which are a series of workshops, during which carefully selected representatives of business and science communities are put together to assess the potential of a given economic area,
- maps of innovation that are a new method for monitoring technological trends on the basis of enterprises' applications for funding,
- crowdsourcing, that is the use of electronic forms of reaching out to entrepreneurs who are not yet cooperating with public administration.

The main objective of the conducted by Central Mining Institute team studies was to use the model of entrepreneurial discovery process to identify the areas of advantage relevant to the formulation of an innovation development policy in Silesia Region on the basis of smart specialisations (Entrepreneurial discovery..., 2017). The carried out research included two stages. In stage I, a coherent methodical framework for conducting and implementing the entrepreneurial discovery processes in the Silesian Voivodeship was developed. This base on the available knowledge and previous experience as well as practices from the regional, national and European level. Stage II is a practical application of the entrepreneurial discovery process developed in stage I in Silesia Voivodeship with the use of the available data and with conducting qualitative research for the selected pilot area within defined spatial, time and sectoral boundaries. Data provided by the Polish Patent Office, the Central Statistical Office and the Marshal's Office of the Silesian Voivodeship were used in the research. The studies were carried out on a deliberately selected group of entrepreneurs and experts involved in innovation process implementation.

The article presents the experiences from the work on the model of the EDP for the Silesian Voivodeship. This allows in the future the identification of the priorities for national and regional innovation support programs. The benefits of EDP come not only from the final results, but also from the EDP process itself because it "aims to identify areas with the potential to achieve critical mass based on local (endogenous) resources, e.g. qualified labour, natural resources, clusters, R&D expertise, etc. (Mieszkowski, Kardas, 2015). Stakeholders representing the quadruple helix (business, R&D, society, administration) should be empowered and actively participate in the process of discovering viable potential areas", it "is a learning process to select research, development and innovation (R&D+I) as well as non-technological activities in which a region can hope to excel. It's a vision about opportunities in existing or emerging sectors" (W kierunku..., 2015; www.know-hub.eu...).

2. Stakeholders as a key group of actors of the innovation ecosystem

The EDP is a basic element of RIS3 strategy and the smart specialisation framework. As part of the EU innovation network, the RIS3 strategy should focus on the process of systematic identification, verification and modification of public policy priorities. The EDP should help in choosing smart specialisations in a bottom-up approach, determined by the market and technological capacities discovered by companies, which should be at the center of the innovation process. As part of this process, public administration should, based on the identified needs of entrepreneurs, design and address support for the implementation of innovations so that it influences the increase in the development potential of companies and, as a consequence, of regions (s3platform.jrc.ec.europa.eu...). The EDP should also help in removing the barriers to cooperation between the private and public sector, identifying companies that could benefit most from public support and adapting public support instruments to the priority needs of companies (www.visionary.lt...; Hausmann, Rodrik, 2003; Foray, 2015). The EDP model consists of three key stages (Fig. 1).



Figure 1. Universal elements of the EDP. Source: own study based on: Gianelle, C., Kyriakou, D., Cohen, C., Przeor, M. (Eds.) (2016). *Implementing Smart Specialisation Strategies. A Handbook*. European Commission.

For the purposes of the conducted research, a review and identification of good practices in the field of methodology of conducting entrepreneurial discovery processes in the context of innovative development on a European scale was also carried out. To this end, the European Commission documents containing guidelines for conducting the entrepreneurial discovery process (Gianelle, Kyriakou, Cohen, Przeor, 2016) were analysed along with examples and the literature in this area. A successful course of the EDP requires close cooperation, participation and commitment from all stakeholders. It is very important to establish and strengthen contacts as well as to generate knowledge and added value, which would probably not be achieved without such close cooperation between the private and public sector. Interviews with company representatives seem to be a key tool for actively establishing cooperation with business. In addition to awareness-building activities, there are a number of other ways to initiate cooperation between business and Business Environment Institutions and R&D institutions. Good practices in cooperation between business and science are presented in the examples from, i.a., Great Britain and Belgium. *Knowledge Transfer*

Partnerships is considered the highest standard of cooperation between universities and industry in Great Britain. KTP is a nationwide programme that helps businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK Knowledge Base. The programme is based on a tripartite partnership model in which a university graduate is delegated in order to transfer academic knowledge so as to satisfy a company's key need, and the knowledge transferred from the company to the university allows the enrichment of teaching and the increase in the usefulness of the ongoing studies. On the other hand, the Belgian Baekeland Mandates programme is aimed at supporting research conducted to obtain scientific and technological knowledge as a basis for economic implementations (Adametz, Jones, Grussenmeyer, Marinković, Mayr, 2013). On the example of Spain, Soledad Diaz shows the synergy effects of interaction between all members involved in the process of creating and using innovations (representatives of academia, entrepreneurs, representatives of public administration units (local governments); representatives of local communities/society) and members of the Science and Technology Park as a factor determining the development of the region ([www.regionalstudies.org/...](http://www.regionalstudies.org/)). Periañez-Forte and Navarro also point to the essence of cooperation between the Regional Government of Andalusia and business (small and large enterprises), scientific community, science and technology parks, etc. in order to identify key challenges and establish an action plan within the framework of RIS3 strategy (Periañez-Forte, Navarro, 2016).

Public support under the new EU financial perspective should be developed on the basis of the real needs of enterprises. These needs can be identified by visiting enterprises and conducting an in-depth analysis of the data obtained from their representatives, which is a key element of the EDP and constitutes a significant contribution to the policy on smart specialisation strategies. Interviews conducted directly with entrepreneurs should be an essential element of the EDP and provide a key input to the smart specialisations and RIS3 policy. The *Growth Services Range* programme in New Zealand as well as *GazelleGrowth* programme and *Regional Centers of Growth (Regionale vaekstuse)* in Denmark are examples of good practices in the field of support programmes for companies with high growth potential (OECD, 2010).

3. The EDP model for the identification of regional areas of advantage

The first phase in the EDP model in the context of innovative development of the Silesian Voivodeship strongly refers to the paradigm of *evidence-based development policy*. The collected evidence, due to the nature of smart specialisation (competitive advantage in very specific areas), must capture the position of the voivodeship in relation to trans-regional references in statistical terms. They must also refer to those areas of reality in which the

economic sector, technologies and R&D sector meet. On the basis of the available evidence base, it was possible to indicate the areas of economic, scientific and technological advantage in the Silesian Voivodeship. The use of conversion maps made it possible to present these areas in one universal way, i.e. using the Polish Classification of Business Activities codes. The list of key areas of advantage emerging from the works carried out is summarised in Table 1.

Table 1.
Regional areas of advantage

Polish Classification of Business Activities section	Polish Classification of Business Activities department	Economic sector
B	05	coal and brown coal mining
B	09	service activity supporting mining and quarrying
C	13	manufacture of textiles
C	15	production of leather and leather products
C	19	manufacture and processing of coke and refined petroleum products
C	22	manufacture of rubber and plastic products
C	24	metal production
C	25	manufacture of finished metal products, excluding machinery and equipment
C	26	manufacture of computer, electronic and optical products
C	27	manufacture of electrical equipment
C	28	production of machinery and equipment, not classified elsewhere
C	29	manufacture of motor vehicles, trailers and semi-trailers, excluding motorcycles
E	38	activities related to the collection, processing and disposal of waste; recovery of raw materials
E	39	activities related to revegetation and other service activities related to waste management
F	42	Works related to the construction of civil engineering structures

Source: own study.

It should be noted that the above-mentioned areas of advantage were indicated as crucial not only because of their strong economic, scientific and technological potential, but also due to their strong relationship with the emerging industries and the green economy. All further expert work was aimed at defining the possible advantages (specialisations) of the voivodeship based on the collected and analysed statistical evidence. Expert works included mainly interactions with entrepreneurs and the study of their needs as to the preferred forms of support for innovative development, but also interactions with the research sphere, the offer of which is a real response to the needs of entrepreneurs. The second phase of the entrepreneurial discovery process is aimed at the identification of needs. Due to the vastness of the selected areas of advantage, it cannot be included in one study and it is linked to constant verification and updating of the evidence base. The pilot area was selected for further works.

4. Methodology for conducting direct interviews with stakeholders and sample characteristic

The proposed set of research tools and methods includes broad participation and interaction between participants of the EDP. The developed model of the entrepreneurial discovery process in the context of innovative development of the Silesian Voivodeship involves deliberately combined and modified methodologies, which guarantees that the results obtained with its use are comparable on a national and international scale. The entrepreneurial discovery process in the context of innovative development of the Silesian Voivodeship included expert works for the selected pilot area with particular emphasis on the identified area of advantage, i.e. sections 22 and 28. Expert works were carried out with the use of a number of methods and tools - foresight research, personal interviews, CATI, CAWI, online questionnaires, maps of innovation. Works in this phase of the EDP focused mainly on the interaction with entrepreneurs in the form of personal interviews, and it was complemented by the data obtained from the research sphere, the offer of which is as it were a real answer to the needs of entrepreneurs. By way of personal interviews with entrepreneurs, the information on expectations and conditions of innovative development was collected, and the precise needs of entrepreneurs were identified in terms of innovative solutions that would allow to achieve competitive advantages at the regional level. The collected information was supplemented with the results of the foresight process carried out in the R&D sector and among the members of the Silesian Innovation Council, which allowed for a preliminary outline of the visions and scenarios of innovative development of the Silesian Voivodeship in the 2020+ perspective. To ensure methodological compliance of the developed EDP model during the implementation of personal interviews with entrepreneurs, a set of methods developed by the World Bank at the request of the Ministry of Economy was taken as a starting point.

In order to create a database of enterprises operating in identified sectors of advantage, according to the established methodological approach, the content of websites and search engine of national economy entities were analysed (rynkometr.pl; www.krs-gus.pl; wyszukiwarkaregon.stat.gov.pl/...), the data obtained from the Marshal's Office of the Silesian Voivodeship and the Central Statistical Office, the BEI database, as well as instructions from companies already participating in interviews, especially in the area of their leading customers and/or suppliers were used. During the identification of enterprises for conducting personal interviews, the following criteria were applied:

- an enterprise registered in the Silesian Voivodeship,
- activities (Polish Classification of Business Activities code) in the area of the sectors of advantage selected for the Silesian Voivodeship,
- mainly large enterprises (champions),
- enterprises conducting R&D activity.

A representative group of 191 enterprises from the Silesian Voivodeship was selected. Out of the 191 selected entrepreneurs, 32 expressed their willingness to participate in a personal interview. Interviews with company representatives were conducted on the basis of a standardised questionnaire prepared for this purpose, including open and closed questions. The questionnaire was developed on the basis of the experience of the World Bank, in accordance with international good research practices on entrepreneurship and innovation, and after an in-depth literature study. In addition, a pilot study was conducted prior to the main study, the aim of which was to verify the correctness of the established test procedure. As a result of the pilot, changes/additions were made in the scope and type of questions asked in the interview questionnaire in accordance with the conclusions and experiences of the pilot. This was important in order to optimise the questionnaire so that it would be maximally adapted to the specificities of the Silesian Voivodeship and provide as much relevant feedback as possible, while being comprehensible and respondent-friendly.

During the interviews, the answers received were accurately recorded; it was ensured that the answers are complete, and the completed questionnaires as well as obtained information are kept safe and confidential. Each interview began with outlining the essence and objectives of the entrepreneurial discovery process in the context of innovative development of the Silesian Voivodeship until 2020, and the sectors of advantage in the Silesian Voivodeship selected on the basis of quantitative data analysis were indicated. Then, based on the prepared questionnaire, a structured, moderated discussion focused on the elements important for the growth and development of innovation in the voivodeship was conducted. At the end, a short summary was made and any additional Entrepreneur's questions were answered. In addition, after the interview, additional comments/observations were noted. The interview lasted about 1-1.5 hours.

The research tool was a questionnaire consisting of 63 (quantitative and qualitative) questions. The obtained answers were processed and generalised with the use of statistical methods. The answers to qualitative open questions allowed to synthetically supplement the results of quantitative research in terms of the identification of factors conducive to the development of innovation, barriers to development and directions of expected public support in this area in the Silesian voivodeship.

Entrepreneurs for direct personal interviews were selected primarily from the sectors identified in statistical surveys and analyses as potential areas of advantage in three domains: economy (Polish Classification of Activities sectors), technologies (patent statistics in terms of the International Patent Classification) and R&D area, excluding intelligent specialisations of the Silesian voivodeship. Personal interviews were conducted with representatives of enterprises. Half of the surveyed enterprises employ more than 217 employees. The smallest company employs 3 people and the largest has 11,889 employees. Figure 2 shows how the number of employees in the surveyed enterprises changed in the years 2014-2016.

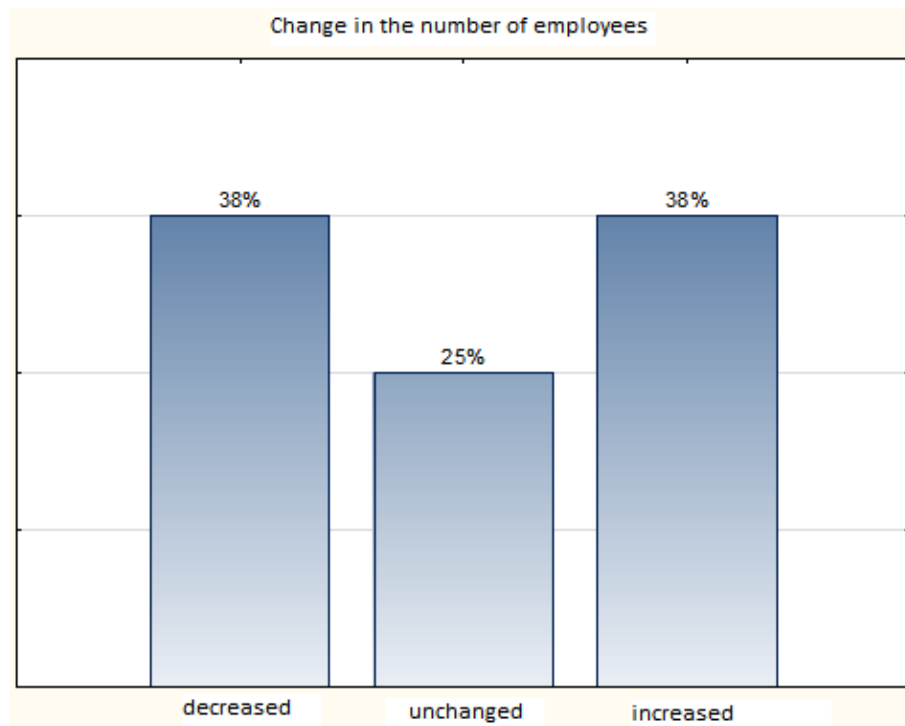


Figure 2. Change in the number of employees in the surveyed enterprises in 2014-2016. Source: own elaboration.

63% of the surveyed enterprises have an international reach. 57% of the respondents declare that part of the total revenues of the company comes from innovative products or services. 63% of the surveyed companies identified themselves as the market leader.

5. Results and discussion

The results of direct interviews were grouped according to the structure of the interview questionnaire:

Factors driving innovation

There are many factors that drive innovation in enterprises (from macro, meso and micro level). During the interviews, the focus was mainly on factors stimulating innovation from the enterprise level, which results from the established objectives of the entrepreneurial discovery process, in a bottom-up approach, determined by the market and technological opportunities discovered by the companies that are at the center of the innovation process.

All surveyed entrepreneurs, when asked about the three most important factors stimulating innovation, pointed to customers and suppliers as the most important factor (Fig. 3), due to the continuous, direct impact on the operations of enterprises caused by striving to meet the expectations of customers regarding the products and services offered. Following the

expectations of customers determines the competitiveness of the company, reflects its potential, that is, resources, skills and adaptability to changes taking place in the environment, which provides an advantage over other entities operating in the same sector.

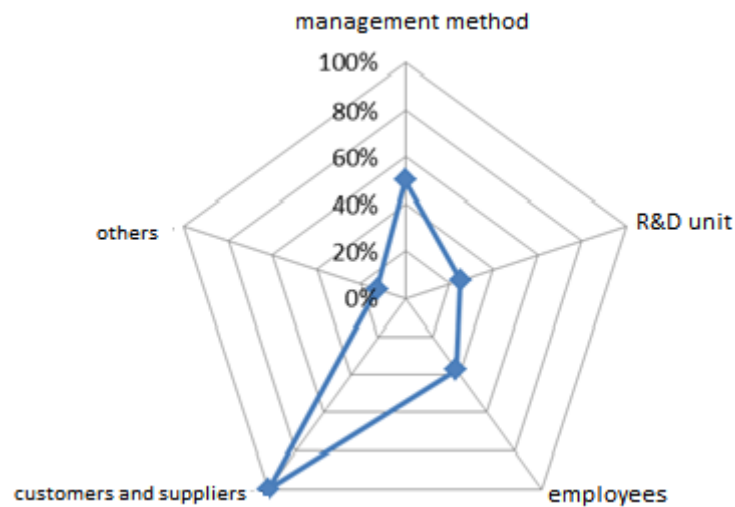


Figure 3. Factors driving innovation. Source: Own elaboration.

Stankiewicz (Stankiewicz, 2000, p. 95-111) defines the competitiveness of enterprises as a system comprising four elements: the potential of competitiveness, competitive advantage, competitive instruments and competitive position, understood as the competitive result achieved by the enterprise in a given sector. Such approach reflects a number of important factors and conditions that affect the competitiveness of enterprises. On the basis of research conducted in 56 micro and small enterprises, Jabłońska-Porzuczek and Smoluk-Sikorska (Jabłońska-Porzuczek, Smoluk-Sikorska, 2017) determined the competitiveness factors of companies. The paper discusses the main internal determinants affecting competitiveness, among which the most important are: high product quality, their price, the range of the assortment and the possibilities of financing the development. The quality of service and customer relations as well as the image of the company were also considered very important. The respondents also emphasised the importance of modern production technologies and innovation.

During personal interviews, management was also indicated as an important driver of innovation, which suggests that activities related to introducing management practices for innovations, as well as all information and education activities aimed at increasing awareness of the importance of innovations among the management staff would be of great benefit.

The surveyed entrepreneurs also pointed to the initiative of their own employees as the driving force of innovation. Including employees in the works on new products and services is an opportunity to discover new sources of growth, get first-hand information about market trends, customers and competition, as well as increase the involvement of the staff in the implementation of projects. 71% of the respondents declared the existence of a system of incentives for employee development, while 63% of the companies have an incentive system for employees to take innovative initiatives.

The respondents confidently pointed to the need to apply eco-innovative technologies in already existing, strong industry sectors, resulting from the historical circumstances of the region, as the key to the competitiveness of the region. The introduction of eco-innovations would allow companies to incur lower environmental charges and avoid potential penalties as well as reduce costs while at the same time positively affecting the investment capacity of the enterprise. At the same time, however, the issue of capital-intensive nature of such initiatives was raised. Therefore, projects aimed at introducing ecological and innovative processes or products are often postponed until later due to the need to involve a large amount of resources, especially at the research stage, and in addition, they carry a considerable risk of failure.

While assessing their own achievements and establishing goals for the future, enterprises take into account their own situation as well as the situation prevailing on the market, hence the immediate market environment, mainly competition, is always taken into account in the development of plans and innovative strategies of enterprises. In almost half of the companies surveyed, innovation strategies are included in the company's overall strategy, while 38% of enterprises have a separate innovation strategy – this applies mainly to companies that have a stable position and are long-established on the market. 13% of the respondents claim that there are no records regarding the innovation strategy in the company's strategy.

When asked about the attitude of management towards the market situation, entrepreneurs most often pointed to the reactive and proactive attitude. The vast majority (approx. 80%) of the respondents claim that risk-related decisions concerning the introduction of innovations in the company were made. Risk is of significant importance especially in the implementation of innovative projects – the level of risk in a given project is directly proportional to its innovativeness. It is worth noting that there is a considerably higher risk during the implementation of innovative projects in popular areas and much lower in niche areas. The ability to take risks is an important feature in creating innovation, it ensures the company's development and contributes to building market value. However, mere knowledge and appropriate character traits are not sufficient for an entrepreneur to deal with risks, a specific risk management method is also very important.

The supplementary question referred to eco-innovation. Entrepreneurs were asked if they were interested in eco-innovations and whether they are introducing such solutions in their activities. The respondents pointed primarily to the importance of this type of innovations in the context of development of the post-industrial region of the Silesian Voivodeship. Many companies invest in environmentally friendly solutions because only in this way can they ensure an increase in their competitiveness and further functioning in the face of increasing legal restrictions (especially those that involve the reduction of all types of emissions). Eco-innovations are seen as solutions that can save large enterprises from bankruptcy, nevertheless, it was pointed out that funds for the implementation of projects reducing the burden on the environment are small and entrepreneurs do not know where to apply for them.

Sources of information about innovations

Sources of information about innovations are defined as entities and tangible or intangible resources that provide information on technical solutions that can be implemented in the given conditions.

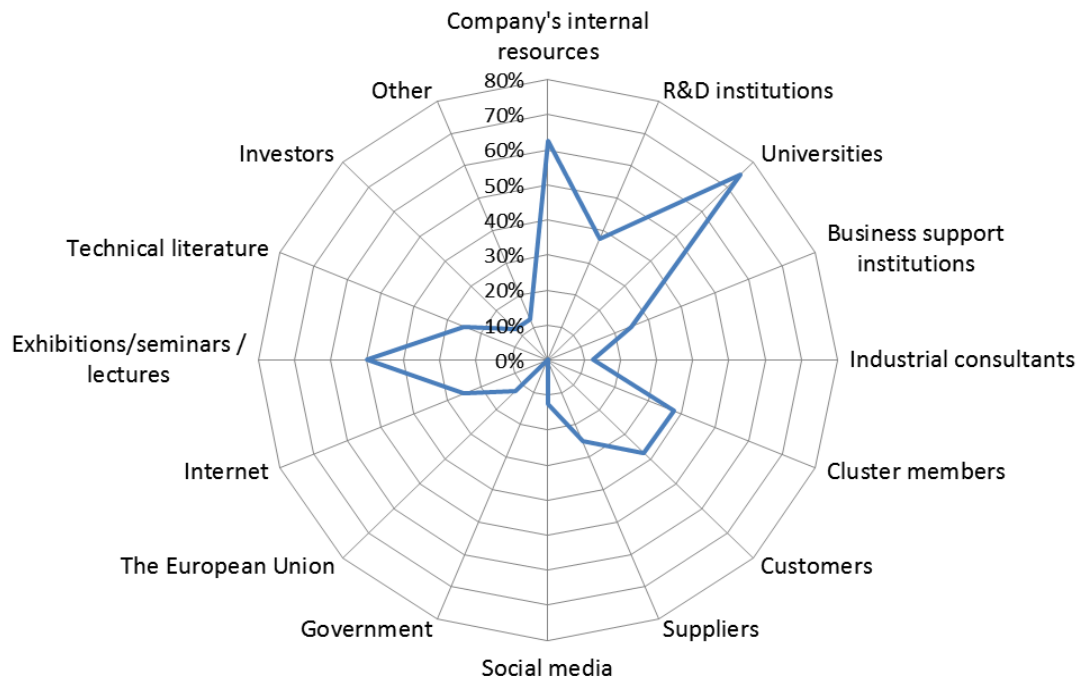


Figure 4. Sources of information about innovations. Source: own elaboration.

Figure 4 shows which sources of information about innovations are used most often by the surveyed entrepreneurs. Identification of innovations is the phase in which entrepreneurs learn the most, both about their own enterprise and the business reality that surrounds them. Universities and other academic institutions, internal company resources as well as exhibitions/seminars/industry lectures were indicated as the key sources of obtaining information about innovations.

Another important source of information for innovative activities are internal resources of the company, that is employees' knowledge. This information shows entrepreneurs' awareness of the positive effects that the R&D and development based on the company's internal resources can bring. Highly developed countries place great emphasis on incurring expenditure on R&D and developing innovative solutions, drawing on the endogenous resources of the company, using the knowledge and skills of the staff.

The analysis carried out by Dzikowski (Dzikowski, 2015, p. 3-9) showed that the most frequently indicated sources of information for innovations in the medium-high and high technology industry in Poland are: customers (57.56%), internal sources of the enterprise (40.66%) and conferences, fairs and exhibitions (40.30%). Similar results were obtained by Szopik-Depczyńska, Konecka and Stajniak (Szopik-Depczyńska, Konecka, Stajniak, 2016) during the survey on the impact of information sources on the innovative activity of industrial enterprises representing the transport sector. In addition, the research conducted by

Tomaszewski (Tomaszewski, 2015) also showed that the sources of innovation were at the same time sources of information about innovations. Using information about innovations from a given source favored the occurrence of innovation cooperation with the given source, which coincides with the results described in this paper.

The information obtained during interviews indicate that entrepreneurs rarely use the resources of Business Environment Institutions – BEI (science and technology parks, business incubators, technology transfer centers, contact points), pointing to ignorance of such institutions operating in the Silesian voivodeship, support opportunities and services they offer. Entrepreneurs who had the opportunity to use BEI (approx. 20% of respondents) raised the issue of poor quality of services they provide, an overly conventional and unadjusted approach to individual needs and problems of enterprises. The results obtained during the interviews are to a large extent consistent with the World Bank's conclusions (W kierunku..., 2015) regarding the functioning of BEI.

Financial aspects

Since financial constraints are often one of the barriers to the implementation of innovative activities, the interviews also included questions about the company's revenues. In order to ensure the comfort of the subjects and increase the comparability of their answers, the values are presented in brackets. 86% of the surveyed entrepreneurs are companies with total revenue exceeding PLN 5,000,000 in 2016. The remaining 14% were smaller companies with relatively low incomes, not exceeding PLN 250,000. At the same time, it is noteworthy that only in the case of companies with the highest income, part of the revenue came from innovative activity.

In the opinion of the respondents, it is important to be able to raise external funds for investments in the field of innovation as well as for training activities and projects related to the exchange of experience and supra-regional or supranational cooperation in order to maintain ongoing innovation activity. Although as many as 50% of the entrepreneurs did not use public support measures in the last 3 years, in some cases this was not due to lack of interest, but rather to lack of effectiveness in raising funds. Only 12% of the respondents did not apply for support for innovations in the last 3 years. Most of the respondents applied on average once a year. Only 13% were more active in this area.

Barriers to innovation

The results obtained during personal interviews indicate that the biggest barrier for companies in developing innovative solutions is often the lack of funds for the launch of new projects and innovative undertakings, as well as difficult access to such funds, especially for large enterprises. As in the case of growth barriers, entrepreneurs pointed to the capital-intensive nature of innovative investments and the associated high risk. The qualitative data obtained in the course of numerous discussions with entrepreneurs raise the issue of too complex, complicated and difficult procedures of access to public funds allocated for

innovative undertakings. The problem of financing current or planned projects often arises in organisations' activities. In the case of larger investments, if the enterprise does not have sufficient financial resources, it is possible to obtain financial support from the EU, national or regional funds. However, at every stage, preparation of application, acquisition, use and closure of the project, there are numerous barriers that entrepreneurs encounter. If there is a separate post or R&D department in the company structure (over 60% of the surveyed companies have a R&D department, but it consists of several people) which deals with filing applications, then the works related to the preparation of the application will focus there. In the case where there is no separate R&D department, a project team is most often appointed when the need arises. The surveyed entrepreneurs also pointed to technical and legislative constraints as well as company management. Data collected by the World Bank (W kierunku..., 2015) also indicate a strong correlation between the quality of the company's management practices as measured by the quality of employee efficiency assessment system, management structure and quality of human resources management, and the intensity of innovation in the company. The legal environment is also considered by the respondents as a significant barrier to innovation, pointing out that EU regulations are more business-friendly than domestic ones.

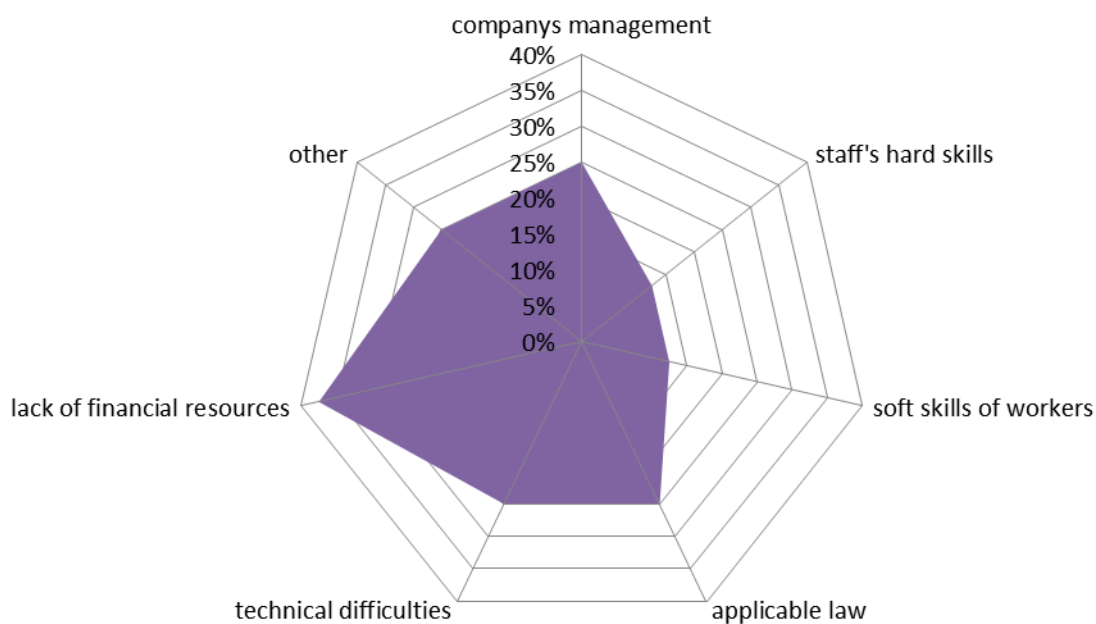


Figure 5. Barriers to innovation. Source: own elaboration.

Types of innovations implemented in the surveyed enterprises

The innovations most frequently introduced in the surveyed enterprises were product innovations at the national and company level. Marketing and organisational innovations were the least frequently introduced innovations. This may mean that companies do not fully appreciate the productivity potential associated with improving business processes, marketing skills and organisational practices.

6. Summary

The conducted research indicates that the conduction of the EDP is conditional upon close cooperation, participation and involvement on the part of all stakeholders. EDP enabling establish and strengthen of contacts as well as to generation of knowledge and added value, which would probably not be achieved without such close cooperation between the private and public sector. Interviews with company representatives seem to be a key tool for actively establishing cooperation with business.

Personal interviews were conducted among 16 entrepreneurs from the Silesian Voivodeship, selected within previously identified sectors of advantage. Interviews were conducted in the form of a moderated discussion based on a standardised questionnaire containing 63 quantitative and qualitative questions.

There was identified several factors that drive innovation in enterprises in Silesia region, however, all surveyed entrepreneurs indicated customers and suppliers as the most important factor. The respondents pointed to the need to apply eco-innovative technologies in already existing, strong industry sectors, resulting from the historical circumstances of the region, as the key to the competitiveness of the voivodeship. This was justified by lower environmental charges and avoidance of potential fines, as well as by reducing operating costs while positively affecting the investment capacity of the company, contributing to the protection of the environment and to sustainable development policy. Universities and other academic institutions, internal company resources as well as exhibitions/seminars/industry lectures were indicated as the key sources of obtaining information about innovations.

In the opinion of the respondents, it is important to be able to raise external funds for investments in the field of innovation as well as for training activities and projects related to the exchange of experience and supra-regional or supranational cooperation in order to maintain ongoing innovation activity. However, the majority felt that the effectiveness of the system for applying for public support, both at the regional and national levels, is not sufficient. What was emphasised above all was the complicated procedures for applying for funds and the long duration of the project evaluation process, which hinders the possibility of joining subsequent projects, without knowing the outcome of the previous ones. The main barriers to growth were the capital-intensive nature of investments and the accompanying high risk, investment expenditures, long-term decision-making processes at every level as well as the limited availability of EU funds, especially for large enterprises.

The biggest barrier for companies in developing innovative solutions is often the lack of funds for the launch of new projects and innovative undertakings, as well as difficult access to them, especially for large enterprises. The surveyed entrepreneurs also pointed to technical and legislative constraints as well as company management. The increase in expenditure on innovation is an opportunity for economic development of the region. However, for financial support of innovation, it is necessary to create appropriate institutional, system, legal and educational facilities. Research contributes to a further deepening of the knowledge on the

implementation of the EDP process and the possibility to use its results in the programming of regional development.

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