

## FINANCING SOURCES OF THE HEALTHCARE SECTOR ENTERPRISES' INNOVATION ACTIVITY IN ŁÓDZKIE PROVINCE

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**Abstract:** Under the conditions of the constant changes taking place in the technological, social and economic spheres, one of the desired features of the healthcare system is innovation. Broadly understood innovation is the basic method of overcoming competitive struggle under the system of market regulation in Poland. The goal of the healthcare sector is to provide services that are of high quality and that are available to all who need them in specific areas. Innovative activity in the healthcare sector has to lead to the building of competitive advantage by increasing operational efficiency and providing health service quality. The maintenance and enhancement of market place has led to the support and stimulation of new services, new products and the taking on of best organizational and marketing solutions. The article aims to generate an understanding of the financing sources of the healthcare sector innovation activity in the Łódzkie province. The studies refer to the cooperation of enterprises from the healthcare sector in creating innovations, including the selection of financing sources of innovative undertakings.

**Keywords:** innovation activities, financing innovation, enterprise, health sector.

### 1. Introduction

Running business on contemporary market requires constant adjustment to the changing conditions of contemporary environment. In order to meet these requirements, companies are constantly searching and implementing new solutions, otherwise known as innovations. Innovative activity allows the achievement and maintenance of competitive advantage and determines the success of a company (Kijek, 2012). Investing in innovative activity is accompanied by great risk of increased financial requirement. Therefore, it becomes necessary to acquire resources that allow the financing of innovative undertakings. The aim of the article is to indicate the financing sources of innovative activity of companies from the health care sector in the Łódzkie province. The study concerned the cooperation of enterprises from the

healthcare sector in creating innovations, including the selection of financing sources of innovative undertakings.

## 2. The essence and types of innovations

According to J. Schumpeter, innovation is a temporary undertaking of particular production determinants referring to the following cases (Schumpeter, 1960):

- initiation of a different, innovative product or different version of a product that has not yet been known to the customers or recipients on the market,
- initiation of a new production process of a particular industry which has never been used in practice or is unknown,
- access acquisition to a new source of materials or semi-finished products regardless of the fact that it has already existed for a long time or has been created not long ago for the needs of a specific project for which the above mentioned materials would be used,
- creation of a new sector of an industry where a given industry has not yet become known, regardless of circumstances or the fact that such a sector exists or if it is in the process of formation,
- development of a new, unique configuration of economic procedures in an enterprise in such branches as production and in the field of goods turnover.

The above mentioned cases interpreted by J. Schumpeter refer to the five types of innovations:

- implementation of new products,
- implementation of new production methods,
- opening of new markets,
- shaping of new delivery sources of raw materials or other resources,
- creation of new market structures within a given type of activity.

J. Schumpeter attached high priority to the achievement of a positive economic result from the implementation of innovation and possibility of its use in practice (Mazur-Wierzbicka, 2015).

Innovation definitions are also interpreted in a broad and narrow sense. In the narrow sense, innovation is treated as an invention which finds a specific use; in the broad sense, however, innovation is a management process covering varied actions leading to creation, development and putting into action new values in products or new combinations of means and resources which constitute novelties for organizations creating or implementing them (Stawasz, 2017). This perceived innovations also cover the transfer of such values to the existing or new business partners and may constitute a work result of a group of enterprises (Niedzielski, Rychlik, 2006).

Innovation inseparably combines with the concept of innovativeness, which, according to P. Niedzielski, is a “feature of business entities or economies which means the ability to create and implement innovations and also their absorption binding with active engagement in innovation processes and undertaking actions in this direction; it also means engagement in the acquisition of economic resources and abilities necessary to participate in those processes” (Niedzielski, 2005). Innovativeness is often measured via the amount of activated innovations and the size of expenditure on the actions. More specifically, it corresponds to owned resources and also the ability of using them, which is the innovation maturity (proper level of organizational culture conditioning the use of owned resources) (Pichlak, 2012).

Currently, international standards and definitions in the field of innovativeness are based on the Oslo Manual elaborated by OECD. According to the manual, innovation is the implementation of a new or much better solution into practice regarding the process, product, service, marketing and organization (Oslo Manual, 2008). The Oslo Manual distinguishes four of the following types of innovations (Oslo Manual, 2008):

1. Product innovation is activating a product or service that is new or significantly improved in the scope of own features or applications. This includes substantial improvements concerning technical specifications, components and materials, or embedded software.
2. Process innovation is an innovation within a process that covers initiating a new or significantly improved method of production or delivery. Substantial changes in the scope of technology of devices and/or software are classified to this category.
3. Marketing innovation is an implementation of a new marketing method involving significant changes in the project/construction of a product or in the packaging, distribution, advertisement or price strategy.
4. Organizational innovation is incorporating a new organizational method that has been accepted by the enterprise, in workplace organization or in relationships with the environment which has not yet been used in a given company.

An enterprise which introduces globally new solutions is considered as being innovative, but also innovative is that which puts in place solutions which have not yet been applied in a country or in the very organization. Therefore, innovation does not mean an absolute novelty; it is innovation if the implemented change is new for the organization. The health care system, wanting to develop further, must become innovation-intensive, which will accelerate innovative processes and use them in the process of creating even newer innovations (Lewandowski, Kożuch, Sasak, 2018).

### **3. Innovative activity of enterprises**

Basing economic development on the innovative activity of enterprises seems to be particularly justified in the conditions of contemporary environment. Innovative activity, according to the Oslo Manual, means all actions (undertakings) of a scientific (research), technical, organizational, financial and commercial nature which aim to develop and implement innovations (Oslo Manual, 2008).

The Oslo Manual presents three types of innovative activity that can be conducted by a company in a given, specific period of time (Oslo Manual, 2008):

- innovative activity ending with a success, which is innovation implementation (regardless of whether the implemented innovation achieved a commercial success or not),
- activity which has not yet ending with innovation implementation, which is a continued activity being in the implementation process for the entire time during a given period,
- innovative activity which was somehow interrupted or entirely discontinued before the innovation implementation.

Some of the actions are innovative by themselves, the other may not contain the element of novelty, but are necessary to elaborate the innovation implementation.

Poland's Central Statistical Office (GUS) deals with the analysis of innovative activity in Poland. In accordance with the definition of GUS, innovative activity consists in the engagement of enterprises in different types of scientific, technical, organizational and financial actions that lead to the implementation of innovation (GUS, 2016). The notion of innovative activity covers also research and development activity that is not directly connected to the creation of a specific innovation. It is recognized that innovative activity involves greater risk, hence, not every undertaking may end with success, i.e. innovation implementation. However, the very fact of undertaking innovative activity by an enterprise contributes to the improvement of its knowledge and abilities – and this in turn may influence a successful implementation of an innovation in the future.

### **4. Financing sources of innovative activity**

Capital needs of enterprises which undertake to create innovations are immense. They appear at every development stage of an enterprise (Safin, 2002). At the stage of so-called early development, there comes a necessity to obtain financing for actions related to the taking up of innovations and their introduction to the market. In the growth phase, however, an enterprise seeks further expansion (Zygmunt, 2011).

K. Janasz draws attention to the fact that the sources of capital origin that serve to fund innovative activity, also called the ‘innovative capital’, are very differentiated (Janasz, 2010) (Table 1). These include the financial resources of company owners, credits, bank loans and also resources obtained from EU funding programs. High risk capitals constitute an alternative. Within these there is venture capital and so-called ‘business angels’. A different view on the structure of capitals shows the source of their origin. In this case, we can distinguish capital obtained from other entities in the form of shared surplus of financial resources or physical capitals for an indefinite or strictly defined period (external financing) and coming from the very enterprise and arising due to structural property transformation and/or capital formation (internal financing). The synthesis of those criteria leads to the indication of four financing forms of innovative processes (Janasz, 2009):

- own internal financing,
- own external financing,
- foreign external financing (debt, public with an aid purpose),
- hybrid, with own and foreign financing properties.

**Table 1.**

*Methods and sources of financing of innovative projects*

| Criteria                 | Classification                                      | Examples of financing methods   |
|--------------------------|---|---|
| <b>Property type</b>     | – public,<br>– private.                             | – national budget, EU funds,<br>– credits, loans, PE/VC, stock exchange.              |
| <b>Origin</b>            | – domestic,<br>– foreign.                           | – foreign investors,<br>– direct foreign investments.                                 |
| <b>Financing method</b>  | – direct,<br>– indirect.                            | – depreciation, profit, credit,<br>– technology parks, incubators, entrepreneurships. |
| <b>Financing sources</b> | – equity,<br>– foreign capital,<br>– other capital. | – ownership shares, business angels,<br>– financial market,<br>– high risk capital.   |

Source: Janasz, K. (2009). Teoretyczne aspekty koncepcji kapitału w finansowaniu procesów innowacyjnych. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Ekonomiczne Problemy Usług*, 39, 549, 208.

A. Sosnowska and S. Łobejko add to the mentioned sources the budgetary subsidy and budgetary subsidy supplemented by resources from the EU programmes, public resources coming from the entrepreneurship support funds, regional investor funds and other, including foreign investors (Sosnowska, Łobejko, 2011).

Enterprise financing sources are divided in the literature on financial management and innovation management. The most popular divisions are:

- division by the capital source: equity, foreign funds,
- division by origin: domestic, foreign,
- division by property: public, private, private-public,
- division by financing method: direct, indirect (Kłopotek, 2008).

K. Santarek puts forward that there are two basic financing sources for this process: own and foreign resources – public (including the budgetary), EU and other, and private – venture capital funds, business angels, banks (Santarek, 2008). According to some authors, by analyzing the potential financing sources of innovation, it is possible to divide them to internal sources (coming from national resources) and external sources (offered by the European Union within the leveling policy of community members' development) (Białoń, 2010). Both sources can be used in the financing process of innovative projects.

Innovative activity is often identified with research and development works. Nowadays, such thinking is incorrect, as R&D is one of the areas of innovativeness of an enterprise. According to contemporary approach to innovation (the so-called system model), they are the result of many complex links between entities, organizations and the environment they operate in. The result is that innovative activity significantly extends beyond the area of R&D and covers financial outlays for, in example, research and development works, purchase of tangible assets or software.

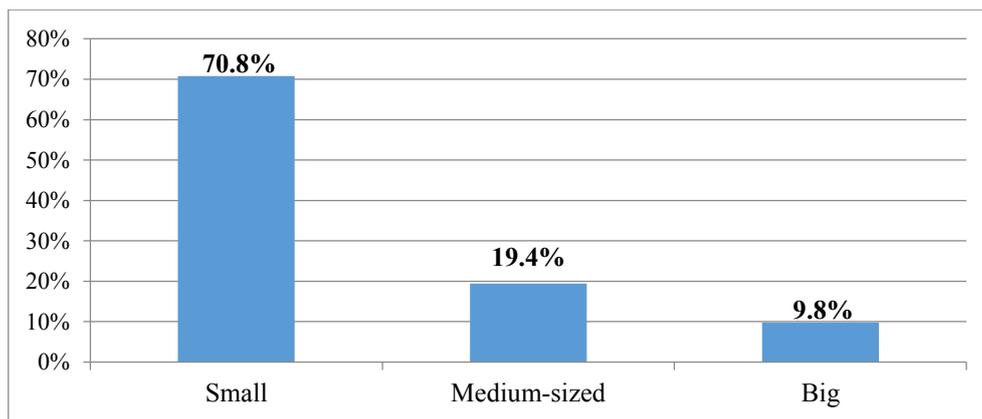
The term 'research and development activity' covers creative work undertaken in a systematic way in order to increase the knowledge resources and their use, so as to create new applications (Communication from the Commission to the Council, the European Parliament). It can be distinguished from other types of innovative activity by the element of novelty and the elimination of scientific and technological uncertainty.

The innovative activity of enterprises depends on many criteria. A problem often reported by enterprises is the lack of financial resources that enable this type of activity. In Poland, a substantial source of financing innovative processes is enterprises' equity. External sources such as crediting, high risk funds or EU funds are still used to a limited extent.

## **5. Financing of innovative activity of enterprises from the healthcare sector in the Łódzkie province**

The aim of the study was achieved by means of the method of a diagnostic survey, using a survey as a research technique and a questionnaire as a research tool. Empirical studies were held within the period of June – July 2018. The surveyed group covered entities that represent the following industries: biotechnology, biomedical technologies, pharmaceuticals, cosmetics and electrotherapy, medical devices, manufacturing and environment protection. The study also included entities that had develop the above mentioned technologies.

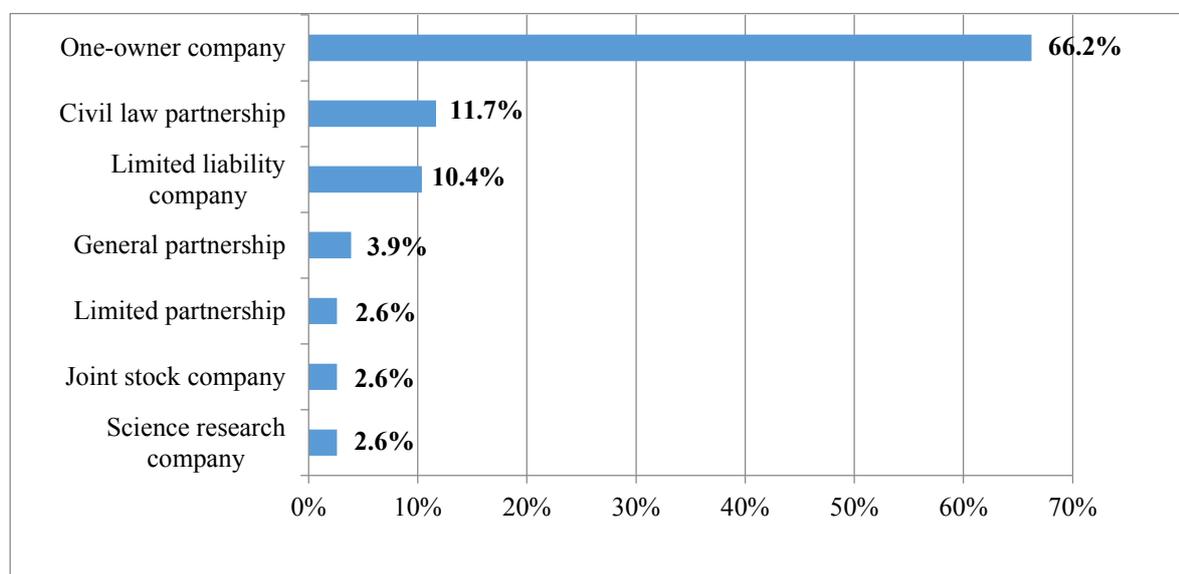
The entire collectivity, from which the drawing of the survey group was performed, counted 734 entities. Stratified sampling was then performed and among the remained 432 enterprises, 113 entities were drawn. The characteristics of the survey group are depicted in Figure 1 and 2.



**Figure 1.** Characteristics of companies according to their size. Source: own elaboration.

Taking into consideration the size of an enterprise, it is possible to notice that 70.8% of all companies that participated in the survey are small companies. 19.4% are medium sized companies. Approximately 10% of the surveyed entities can be classified as big enterprises.

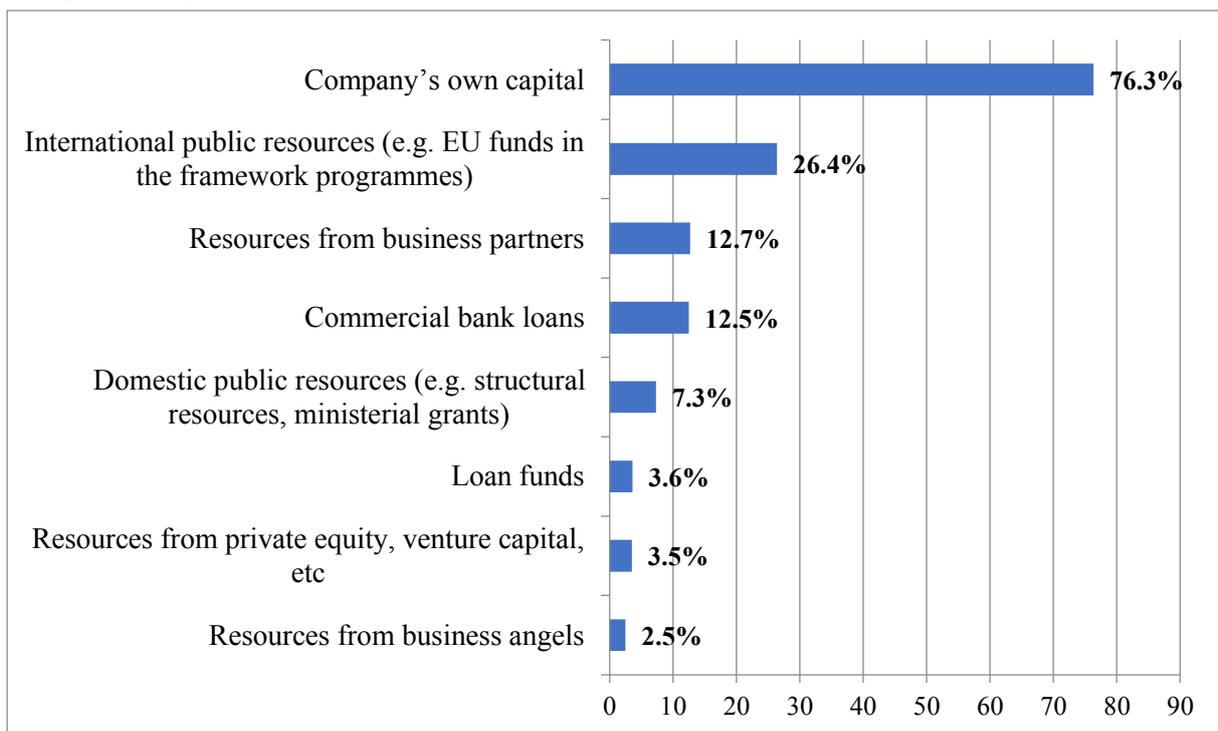
The most willingly chosen organizational and legal form by enterprises operating within the analyzed sector in the Łódzkie province are the one-owner companies (66.2% of all answers). 11.7 % of all companies indicated a civil law partnership as an organizational and legal form and 10.4% indicated a limited liability company. What is more, the surveyed companies have adopted such organizational and legal forms as general partnership (3.9% of all indications), limited partnership, joint stock company and science research unit (2.6% of all answers each).



**Figure 2.** Characteristics of companies according to their organizational and legal form. Source: own elaboration.

As most of the enterprises within the healthcare sector are small- and medium-sized companies, the form of a one-owner company seems to be the most suitable for them. The usage of the organizational and legal form of the one-owner company operating in the healthcare field as the leading one is also confirmed by other studies.

The results indicated that over 90% of all enterprises considered cooperation within innovative activity with other entities significant from the point of view of their development. Almost 10% of all surveyed enterprises do not undertake such cooperation. These answers may prove not only the enterprises' lack of will to implement changes, but also the lack of possibilities to implement changes due to limited resources, especially the financial. This situation has its reflection in the financing structure of innovative activity of those companies (figure 3).



**Figure 3.** Financing sources of innovative activity of companies. Source: own elaboration.

Own capital was indicated as the generally used source of financing in the surveyed companies (76.3% of all indications). This means that in order to minimise the financial risk of an enterprise, they are trying to finance the expenditures on innovations with own capital. Own capital documents the ownership title to the business entity, permanently binds with its activity, equips its owners with decision-making powers, provides share in generated financial result and incomes from the enterprise's sale. Innovations implemented with the participation of equity define the degree of financial independence of a company and simultaneously make the access conditional upon many sources of own, foreign and hybrid external financing. A well prospering enterprise has no problems with creditworthiness or positive image among potential providers of repayable and share capital. Internal financing is the simplest way to cover the innovative activity costs and, as it results from the surveys, it is also often used in economic practice, not only in the environment of big enterprises, but also the small and the medium-sized.

26.4% of all respondents indicated international public resources (e.g. EU funds in the framework programmes) as the other source of financing. International public resources offer support not only to small, medium-sized and big enterprises, but also to companies, which start their business activity without any credit history or securities of a sufficient value. Many of them support internationalisation and facilitate the access to markets, create conditions which foster competitiveness and promote the culture of entrepreneurship. Thanks to the support of the European Commission, financing is available at preferential terms for entrepreneurs within the frameworks of EU programmes. Entrepreneurs may count on many benefits, such as the ones with the lack of securities or with a lower than the commonly required one, with the lack of own contribution or with a lower than the required one, or a higher amount and extended financing period.

12.7% of all indications concerned financing from resources coming from business partners. The other financing source – investment bank loan, must be considered as a supplementing capital source (12.5% of indications). The loan burdens the borrower with regular payments, notwithstanding the financial results, and at the same time requires high liquidity. It is significant to highlight that it is difficult for a new entity to obtain a loan without a history check, especially for an unusual undertaking of innovative nature due to the lack of proper security in a form of property. Furthermore, earlier indebted entities have a limited chance to obtain a loan. It surely can be admitted that it is not an attractive form of financing for small and medium-sized enterprises, but they often decide to use it because of the lack of possibilities to apply other financing instruments.

Due to high expenditures that are required by innovative projects, companies often seek financing from public resources. The specificity of financing from public resources consists, just as in case of a bank loan, in investor's engagement only from the financial side. The objective of an investor, in this case of an institution authorized by the State to use public resources, is an implementation of priorities connected to the modernization of a specified sector of economy (healthcare sector). This means that the companies that benefit from it, must use them for pre-established and targeted actions. Public resources as a financing source of innovative projects were indicated by 7.3% of all the respondents.

The next financing source is a loan fund. This constitutes 3.6% of all the answers. Even though it provides loans only to micro, small and medium-sized companies, the fund proves to have high flexibility while defining the purpose of loans for companies. It provides a possibility to the entrepreneurs to adjust the financing to their own needs.

Definitely unsatisfactory is the percentage of cooperation cases with private equity or venture capital funds (3.5% each) and business angels (2.5% of indications), which are institutions most adjusted to the financing of innovative activity. Financial resources invested by business angels allow companies to greatly develop and achieve market success. Next to the capital, business angels bring experience, knowledge, abilities and contacts to the company. Investors perfectly know the industry they invest in; they know its strengths and weaknesses.

Angels look for business ideas that give a chance for above-average profits, but are burdened with high risk. The risk may relate to the failure of innovative undertaking and recompensation is a highly expected rate of return from the investment. However, despite the big risk, the importance of business angels will be constantly increasing due to a growing significance of innovation and development of new technologies.

Venture capital fund becomes a shareholder and, similarly to a business angel, it shares the risk and profits with the owners while engaging not only financially, but also in the process of the project management. The advantage of this type of financing is the fact that the fund does not interfere with daily management of the company and provides only strategic counselling and preparation of the entrepreneurs to the next development phases of the company. Venture capital invests in innovative companies that have a competitive technological, process or product advantage, and the sector of modern medicine belongs to the most often supported innovative capital-intensive industries. The disadvantage of such a financing may be the high cost of capital acquisition. The owner, in return for the financing and fund competences, hands over a part of its company. This act is connected to the necessity of offering unlimited share of future profits with the fund. Of note, in this sort of arrangement, there is a risk of dilution and loss of control by the owners over the enterprise with each successive financing round.

The insufficient innovative activity of enterprises of the Łódzkie region has strong connection to financing barriers. According to the results we obtained, 32% of all respondents considered the fear of loss of legal and economic independence of the company as a barrier in the access to the financing sources of innovative processes. Thus, entrepreneurs prefer own capital in the financing and simultaneously express reluctance to external financing sources. The reason for low innovativeness of companies may also be due to the high cost using financing sources. Herein, 27% of all respondents considered this as an important obstacle to engaging in an innovative activity. The smaller the company, the higher the percentage of problems due to a too high cost of a financing source.

## **6. Conclusion**

The healthcare sector shows an increasingly visible activity in the field of innovativeness. Innovations in the activity of the healthcare sector, in turn, lead to the achievement of development goals and allow the possibility to renew or expand the range of healthcare services and related markets, to launch new production, to better supply and distribution methods, and to apply changes in the management methods, work organization, work conditions and workforce qualification.

Innovative projects in the healthcare sector are not only the introduction of new technologically advanced products and services, but are also changes occurring within particular areas of an enterprise which lead to changes in the entire healthcare sector. In turn, the use of modern equipment in the scope of information technologies and specialist knowledge influence the innovation implementation.

The studies show the growing significance of innovative activity in the scope of the healthcare sector in the Łódzkie province. Enterprises operating in this sector are more often investing in innovations and also noticing the need of their implementation to enhance the possibility of providing quality improvement of provided services and stimulating competitiveness growth of the enterprise. As indicated in our research, the undertaking of innovative projects aimed at implementing new ideas stimulates the use of own resources. Herein, co-financing coming from other sources is important as a supplementary source. It is significant to notice that alternative financing sources are insufficiently mined in the structure of financial outlays on innovative processes. Unfortunately, a vast part of companies from the healthcare sector in the Łódzkie province possesses too low creditworthiness and too little financial stability. This situation excludes the possibility of obtaining foreign financing sources. The most significant barrier indicated by the companies, however, is the fear of loss of legal and economic independence of the company.

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