

# **Barriers to innovation activity of Polish small and medium-sized enterprises**

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## **Introduction**

Innovation decides standards and development trends of a present-day enterprise, meaning progress, growth and improvement of competitive market standing. Innovation denotes putting new or substantially improved solutions in the field of products, manufacturing processes, organisation and marketing into business practice. Standards of innovativeness of both Polish economy and enterprises themselves are highly inadequate. This is demonstrated, inter alia, by low research and development spending, a major barrier to development of the Polish economy (0.9% of GDP in 2012). Poland ranks very low with regard to standards of economic innovation, which was confirmed by the SII indicator.

Very limited knowledge transfer from Polish research centres and universities to enterprises is a factor adversely affecting innovation standards of the Polish economy. In turn, businesses are not interested in co-financing universities due to low effectiveness of such expenses.

Insufficient innovation activities of enterprises stem from both external and internal conditions. This paper aims to analyse key barriers to innovation of Polish small and medium-sized enterprises. Reduction or elimination of these barriers and activation of the success factors will contribute to rising innovation of enterprises and the economy as a whole. A theoretical analysis of specialist literature and statistical analysis are employed in the present paper.

## **The concept of innovation**

The notions of innovation and innovativeness made their appearance in economic theory fairly recently – in the early 20<sup>th</sup> century – and only gained significance in the 1960s owing to the Austrian economist Joseph Schumpeter. He examined certain economic processes concerning relationships between competitiveness and innovation. He emphasised the essential importance of innovation to economic development of a country and the broad scope of the concept [Schumpeter 1960:104]

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- introduction of new or improvement of existing products,
- introduction of new or improvement of existing production methods,
- launching of new ways of selling or procurement,
- application of new raw materials or semi-finished products,
- introduction of new organisations of manufacturing.

A number of definitions are available in the specialist literature, yet the one by J. Schumpeter is accepted as classic. Two approaches to innovation can be distinguished. First, innovation is understood as changes in the area of production (methods of manufacturing and products) based on new knowledge – this is the narrow (strict) approach. Meanwhile, other specialists define innovation broadly as all processes of research and development intended to apply and use improved solutions in the area of technique, technology and organisation. It can be noted, therefore, that the narrow concept of innovation highlights the importance of technical innovation, key to production processes and growth of output, while ignoring the social and organisational significance of innovation. The notion of innovation as technical change prevails in the economic theory, whereas a broader approach is more common in business practice [Janasz 2003:67].

When definitions of innovation are analysed, varying approaches to the degree of novelty can be noted. Some authors (including J.A. Schumpeter, P.R. Whitfield, E. Mansfield) point out the absolute novelty, others accept the novelty value as perceived by an individual (D.M. Rodgers, M. Marczyk, R. Rothwell, H.G. Barnett, among others).

Regardless of the theory adopted, innovations arise in enterprises. Thus, an innovation-oriented enterprise is characterised by [Jasiński 2006: 158–160]:

- engaging in a broad range of research and development activities (or purchasing new products or technologies),
- spending relatively high sums of money on such activities,
- systematic implementation of new scientific and technical solutions,
- a substantial share of novelties (products and technologies) in the volume of production and services,
- constant launching of innovations.

The compact definition of innovation envisages successful production, assimilation and use of novelties in economic and social areas, while the expanded definition describes innovation as: refreshing and extension of the range of products and services and their associated markets, institution of new methods of production, procurement and distribution, changes to management, work organisation and working conditions as well as employee skills [Marková et al. 2014:105].

Innovativeness is the ability to continually generate and realise innovations which attract buyers with their state of the art and competitiveness. Innovativeness is associated with creative and original solutions. The innovative capacity of enterprises depends in particular on knowledge and qualifications of staff. Innovations introduced in individual areas of an enterprise may become strategic resources laying foundations for competitive edge of such an enterprise in the market. Innovativeness determines standards and directions of development of contemporary enterprises, denoting pro-

gress, development and competitive advantage. Innovativeness should be taken to mean implementation of new or significantly improved solutions to products, manufacturing processes, organisation and marketing in business practice [Cichorska 2010: 79; Filip, Grzebyk, Kaliszczak 2010: 99–106]. The Oslo Manual suggests innovative activities encompass scientific, technical, commercial, organisational or financial actions aimed at developing or introducing new or improved products or processes.

Factors are also indicated which, if used reasonably by an enterprise, can become innovation stimulators in enterprises. These include demand factors and internal conditions (linked directly to resources of production factors in place) [*Oslo Manual*, 2005; Grzebyk, Filip 2013: 20–26]. Factors that may improve innovation standards of Polish enterprises include [Stankiewicz 2009]:

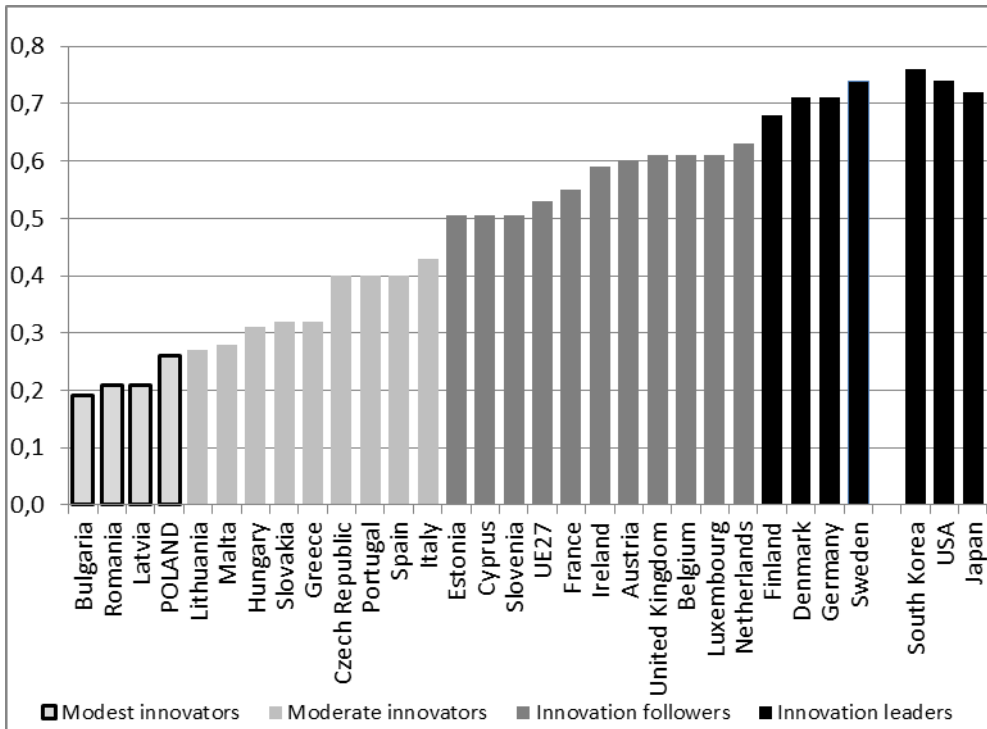
- attempts at joining the network of transnational corporations as reliable, punctual, relatively cheap and occasionally creative subcontractors,
- development of a niche SME sector based on family capital,
- development of high services instead of high technologies; the gap to foreign competitors is relatively narrower in the sector of broadly-defined services at the moment, since the service sector worldwide is still at the stage of development and has not been fully dominated by corporations yet.

This sector provides better conditions for competing than the industry does.

Innovativeness is also connected to absorption of innovations and commitment to acquiring resources and skills required to participate in these processes. Innovativeness is commonly measured with quantity of innovations created and implemented and spending that enterprises allocate to such activities.

## **Innovativeness of Polish economy**

European Innovation Scoreboard, based on Summary Innovation Index (SII), has undertaken a comparative analysis of innovation performance of the European Union member states. The 2012 results confirm a considerable gap between innovation standards of the EU and South Korea, the United States or Japan. The latter can only find their match in the European innovation leaders, i.e. Sweden, Germany, Denmark and Finland. Estonia, Cyprus and Slovenia, which joined the Community at the same time as Poland, ranked relatively high. The Poland's SII value of 0.26 is much below the EU27 average of 0.53. Poland ranked lower than it had in 2011, thus falling away from the group of modest innovators (fig. 1). Latest data indicate Poland is among the countries of minimum innovation standards when compared to the EU average. This grouping comprises Bulgaria, Romania and Latvia. SII grew for the European Union in the successive years (except 2011). Poland suffered its reduction in 2010 and 2012, which may have been caused by the financial and economic crisis across Europe, felt by the Polish economy as well. In addition, Poland experienced a substantially (more than three times) slower growth of the index in the period under discussion.



**Fig. 1. Values of Summary Innovation Index for selected countries in 2012**

Source: the author's own compilation based on *Innovation Union Scoreboard 2013* report, [http://ec.europa.eu/enterprise/policies/innovation/files/ius-2013\\_en.pdf](http://ec.europa.eu/enterprise/policies/innovation/files/ius-2013_en.pdf)

SII values are results of analysis of more than twenty indicators characterising diverse aspects of innovation. Values of selected indicators making up SII reaffirm imbalances between Poland and EU-27 average. The most innovative EU states exhibit a certain set of shared strengths with regard to national research and innovation systems, including the key role of innovative entrepreneurship and higher education. Economic sectors of all innovation leaders display very high indicators of research and development spending and are leading patent applicants. Well-developed university sector and close links between industry and science are present in these countries. Analysis of SII components for Poland points to both opportunities for and restrictions on innovation of Polish economy in comparison with innovation of the Community. The prevailing numbers of the restrictions has to be noted, though [Wolak-Tuzimek 2012]. Human resources are undoubtedly the strongest point of Polish economy in the area of innovation. Poland's value of this indicator is close to the EU average, yet it must be pointed out that Poland had exhibited higher values of the indicator in the earlier editions of the report than the EU had. A range of signals adverse for Poland can be perceived as far as the remaining innovation factors are concerned. Poland's performance is the weakest in respect of research systems, cooperation and entrepreneurship, as well as numbers of innovative enterprises, a function of Polish entrepreneurs' declining enthusiasm for innovation. Somewhat greater SII

values were noted in such areas as financing and support or creation of intellectual value. Poland is relatively little short of the EU average with regard to investment expenditure of enterprises. It can be concluded, therefore, that Poland has a long distance to cover in relation to the European average.

### **Barriers to innovativeness of small and medium-sized enterprises in Poland**

Innovative activities may be impeded by a number of factors. There may be reasons for failing to take any innovative actions and causes slowing such activities or preventing them from bringing expected results. Empirical results point to presence of innovation barriers both in the environment of enterprises and in their internal structure. The overall condition of an economy which fails to release sufficiently efficient mechanisms of innovation absorption by enterprises is the key factor in the former group of barriers. A limited market demand does not generate sufficient requirements for innovative products. Barriers to innovation can also be found in national innovation policies. A range of programmes expected to stimulate innovativeness, also of enterprises, have been introduced in recent years, yet it has not produced a breakthrough growth of innovation of both the national economy and the enterprise sector [Sieradzka 2014: 27–40].

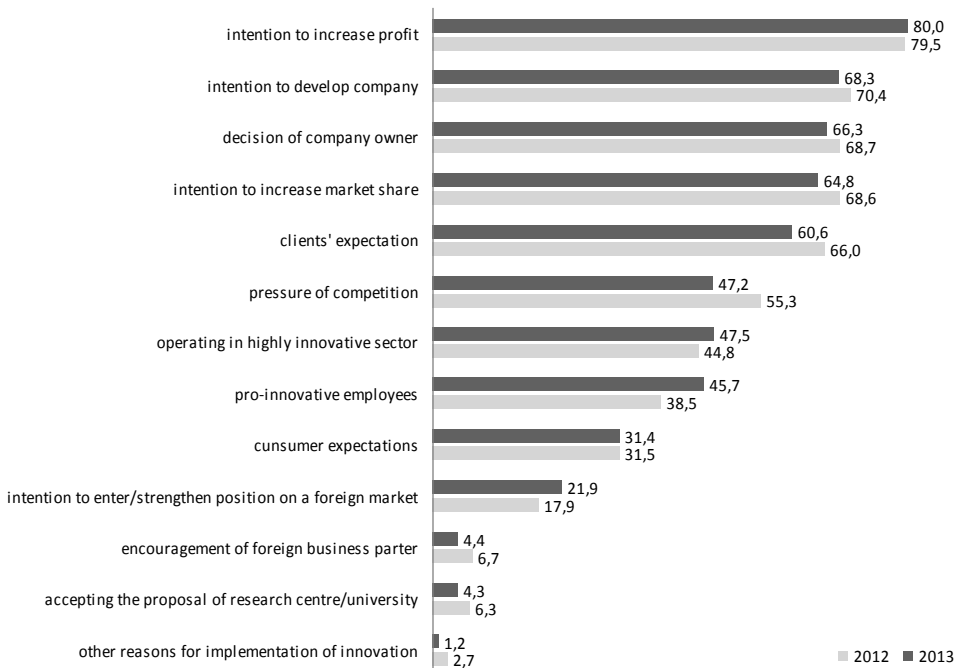
Specialist literature distinguishes the following major innovation barriers:

- 1) market barriers, relating mainly to regional diversification of demand and heavy competition in the market;
- 2) financial barriers to starting of a business, involving:
  - limited access to financing for new undertakings,
  - financing of development,
  - leasing as a form of investment financing,
  - absence of reliable information about business partners,
  - fiscal system;
- 3) barriers connected with government policies, including:
  - putting legislation into practice,
  - unclear regulations in corporate law,
  - licensing of business activity,
  - regional policies;
- 4) barriers linked to production, largely concerning factors of production, employment, technical infrastructure, and space limitations;
- 5) barriers connected with access to local information [Strużycki, Bojewska 2011: 22–23].

Low level or even lack of cooperation between R&D and industry is one of the biggest barrier of development [Zalewski 2010:18]

It is unfortunately difficult to determine weight of the individual barriers, especially as they are of varying importance to different groups of businesses. For instance, financial barriers are particularly restricting for micro and small firms, whereas issues of intellectual property protection are of significance to large companies.

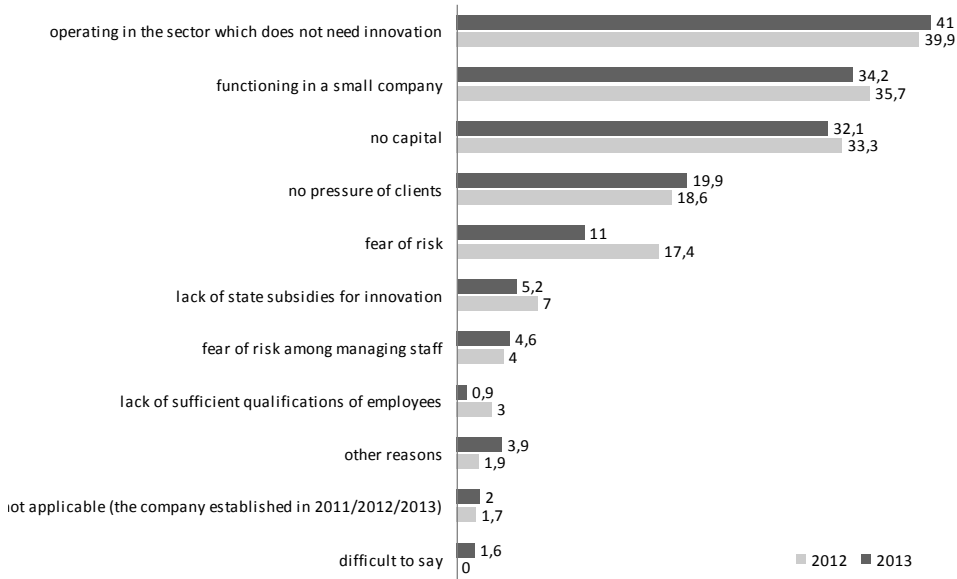
Entrepreneurs consider a variety of factors when deciding to implement innovations (fig. 2). A decision to take such a step is chiefly guided by pre-established strategic objectives. In line with their stated goals, entrepreneurs most commonly decide to introduce innovations owing to: their desire to improve profits, to increase their market share, and to develop their business. Customer expectations and competitive pressure are some of the other important factors encouraging to undertake innovation. The intention to enter or entrench themselves in a foreign market are the least important factors of innovation growth (17.9%), on the other hand. Only every fifteenth entrepreneur (6.7%) decides to implement innovation in their businesses when persuaded by their foreign business partners. A mere 6.3% of SMEs accept invitations to conduct innovative activities in cooperation with research organisations or universities.



**Fig. 2. Causes of implementing innovations**

Source: the author's own compilation based on [Wyżnikiewicz 2013: 38–50]

Entrepreneurs believe the conviction of operating in a sector which does not require innovations is the fundamental reason why SMEs do not introduce innovations (39.9%). Small size of a firm (35.7%) and lack of the necessary capital (33.3%) are the subsequent reasons provided. Sometimes, customers do not expect any innovations themselves (18.6%), which undoubtedly discourages entrepreneurs from taking innovative risks (17.4%). Fear of risk among management is indicated by 4% of those surveyed, 7% SMEs resign from innovations due to absence of state subsidies, whereas 3% believe their staff are not qualified to implement innovative ideas (fig. 3).



**Fig. 3. Barriers to innovativeness of enterprises**

Source: the author's own compilation based on [Wyźnikiewicz, 2013: 38–50]

Domestic demand for innovative products and services, tax reliefs and simplified access to EU funding, as well as competition of more innovative firms in a sector and knowledge about solutions they apply are most commonly listed among factors that would stimulate innovation of enterprises or facilitate decisions to implement innovations. Representatives of SMEs are not sufficiently knowledgeable, however, about factors essential to improving innovativeness of enterprises.

## Conclusions

SME sector is of paramount importance to improving innovativeness of the entire economy, yet the role and significance of individual enterprises vary considerably. Each enterprise has its own innovative behaviour. They both use simple imitations and launch radical innovations. Enterprises may engage in innovative activities on their own or link their actions with other entities. The factors supporting innovation process in enterprises include promotion of making up the cooperative relation and clusters in Poland. The special role in the efforts for sustainable development, among others, indicate: Skawińska E. and Zalewski R.I [2009].

Innovation activities of enterprises are determined by appropriate innovation policies that should support innovative actions of domestic businesses – motivate innovations, lower the risk of undertaking them and reduce barriers to realising innovations. An 'innovation climate' should be created to facilitate flows of scientific and research achievements, of new technological and organisational solutions to enterprises. Only then could innovativeness of both enterprises and the economy as a whole be improved.

Innovative actions of small and medium-sized enterprises are highly limited. This is largely caused by lack of their own funds and unavailability of external financing. Knowledge-related barriers arise from both incompetence of management or owners and absence of appropriate organisations dedicated to research and enterprise development. A major problem is the lack of adequate control mechanisms allowing to manage the risk [Lament 2011: 166–168]. Uncertain and insufficient market demand does not contribute to enterprise development either. Macroeconomic, institutional barriers restrict innovative activities of enterprises, however, enterprises themselves are unable to influence this state of affairs.

To undertake innovative activities, enterprises must have an internal capacity for generating new products/ services, new methods of organisation, new technologies or marketing methods. The ability to take advantage of knowledge created outside an enterprise is important as well. Small and medium-sized enterprises are characterised by lower internal capacity for innovation than larger businesses.

Barriers impeding or preventing innovative activities generally relate to economic factors. Financial barriers were listed among key factors. Many enterprises fail to generate sufficient financial surplus to engage in innovative operations while chances of obtaining third-party funding are very limited, particularly at initial stages of a business. Owners frequently fail to contribute to improving innovation of their firms as they do not have adequate knowledge and skills to manage a contemporary enterprise and consulting services are beyond their financial means. Meanwhile, innovation is directly connected to possession, appropriate use and protection of knowledge.

Given the range of barriers that have considerable restricting effect on innovative activities of enterprises, actions need to be urgently identified to help remedy this adverse phenomenon. Specialist literature offers the following recommendations: more intense activity of public institutions to provide pro-innovation assistance that would effectively reach enterprises in a given region, improved availability of sources of financing innovation through simplified procedures, constructing a system of incentives and formal solutions to mobilise entrepreneurship of scientists and researchers, stimulation of central-level actions to amend legislation, enhance protection of intellectual property rights and streamline the fiscal system.

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## **Bariery działalności innowacyjnej małych i średnich firm w Polsce**

### Streszczenie

Innowacyjność decyduje o poziomie oraz kierunku rozwoju współczesnego przedsiębiorstwa, oznaczając postęp, rozwój oraz poprawę pozycji konkurencyjnej na rynku. Innowacyjność oznacza wdrożenie do praktyki gospodarczej nowych lub istotnie ulepszonych rozwiązań w dziedzinie produktu, procesów wytwórczych, organizacji oraz marketingu. Poziom innowacyjności polskiej gospodarki, jak i samych przedsiębiorstw jest wysoce niedostateczny.

Niedostateczna aktywność innowacyjna przedsiębiorstw wynika zarówno z uwarunkowań zewnętrznych, jak i wewnętrznych. Celem artykułu jest analiza najważniejszych barier i stymulatorów innowacyjności polskich przedsiębiorstw sektora MŚP. Ograniczenie lub eliminacja owych barier oraz aktywizacja czynników sukcesu przyczyni się do wzrostu innowacyjności przedsiębiorstw, a tym samym całej gospodarki. W pracy wykorzystano analizę teoretyczną literatury przedmiotu oraz analizę statystyczną.

Słowa kluczowe: innowacyjność, małe i średnie przedsiębiorstwa, bariery