

MARLENA PIEKUT\*

# Innovativeness of companies in Poland and other European countries

---

**Key words:** innovations, innovativeness of companies, business surroundings

---

**S u m m a r y:** The objective of this paper was the analysis of the statistical data related to innovativeness of entrepreneurs from Poland and other European countries. The data from the GUS and the Eurostat have been used in the paper. The analysis showed that more centres of innovativeness are being established in the territory of Poland and these are more and more specialised units. Polish entrepreneurs rather unwillingly undertake cooperation in the scope of innovative activities with other units. It was also noticed that expenditures for innovative activities in companies and the number of innovations made are on the increase. Major regional differentiation has also been noticed. The Masovia and Silesia areas have the dominant role in innovative activities. The leaders in introducing innovations among European countries are entrepreneurs from Germany, Italy, the United Kingdom, France and Spain.

## 1. Introduction

Development of any innovations requires comprehensive knowledge, experience and skills from many areas. innovations require mental and physical expenditures as well as financial and material means. The publications of the Organization for Economic Co-operation and Development and the Eurostat define innovation as Implementation of a new or significantly improved product, a new or significantly improved process, a new method of marketing or a new method of organisation in the scope of business practices, workplace organisation or relationships with the external environment (1).

---

\* Marlena Piekut, PhD—College of Economics and Social Sciences, Warsaw University of Technology.

Innovations originate within innovative activities which include research activities (scientific), financial, organisational and trade. Innovativeness is thus the result of a complex, multi-level innovative process. Edyta Pawlak (2) finds the following stages in most of the models: concept incubation, implementation and dissemination of the concept. Moreover, this process features mutual dependency of individual stages, high risk, use of various sources of information, high costs, and it is the result of a specific level of knowledge.

Innovation may thus be perceived as a result of partnership of the participants in the innovative process: entrepreneurs, R&D units, advisory and intermediation units, units which financially support introduction of a new scientific and technical solution, units of local government. All these parties should establish a common network of partnership which may, over time, be joined by other entities (3).

Innovativeness is a feature of business entities, a special resource which enables entrepreneurial activity for effective allocation of arrangerable and owned financial, material and organisational resources, as well as developing the optimum configuration of competitive edges (4).

The objective of the paper is presentation of the analysis of selected results of statistical research concerning the level of innovativeness in Polish companies and comparison of these data with the indicators for the European Union. The GUS (Central Statistical Office) and the Eurostat data constitute the source material.

## 2. Milieu of innovative business

The institutional background plays a significant role in developing innovations, as well as the structural, regional and industrial background of the state, supporting innovative activities of business entities. Władysława Jastrzębska (5) indicates that the system of innovations should be understood as a network of public and private institutions whose activities and cooperation contribute to developing, modifying, adapting and disseminating innovations as well as new technologies in the region. The institutions which create the surroundings for innovative companies include local government authorities, college facilities, research and development units, credit and financial institutions, specialised units supporting innovativeness, as well as network-based support systems.

According to the GUS data (6), the number of units managing research and development activities in Poland are continuously increasing. There were 738 of them in 1995, rising to 1157 in 2008. Development units constituted the largest group in the research and development pool, amounting to over 55% in 2008. The second largest group was formed of scientific and research and development units, with university-level facilities ranking third.

Innovations are expensive, therefore the presence of credit and financial institutions in the surroundings of the innovative company is necessary. Entrepreneurs may

also receive support with the European Union funds to enhance the potential of research and development departments, support for purchase of technology or support for protection of intellectual property in companies.

Specialised units supporting innovativeness form another element in the surroundings of the innovative company. The data given in the Report on Centres of Innovations and Entrepreneurship in Poland (7) show that there were about 717 centres of innovations and entrepreneurship active in mid-2009, 28% of which were entities which offer help for innovative entrepreneurship. The highest density of Centres of Innovations and Entrepreneurship was in the Voivodeships: Silesian (87 units), Masovian (65) and Greater Poland (64), with the lowest number of these units active in the Opole Voivodeship (17). 6 centres were recorded in rural areas.

Network-based support systems also constitute an important element of the surroundings of innovative business, such as the National Innovations Center, the National SME Services Network or regional information centres.

### **3. Cooperation in the scope of innovative activities**

Research and development activities in companies and implementing innovations help gain advantageous position in international markets. Experience of many countries which are leaders in innovations and in economy based on knowledge indicate that strengthening the relations between the research and development area and the business and creating cooperation-based relations is the factor which significantly enhances innovative nature of companies and that of the economy (8).

According to the GUS data (6), active cooperation with other units in innovative projects in the years 2006–2008 covered over 8% of industrial companies and about 7% of service companies. These data are lower than in the 2004–2006 period, when this type of cooperation was declared by 11% of both industrial and service companies. Interest in cooperation increased with the size of the company: the industrial companies reported cooperation of about 4% of small companies (employing 10 to 49 persons), about 15% of medium-size companies (with 50–249 employees) and almost 41% of large companies (more than 249 employees). This cooperation was undertaken in the sector of services by about 5% of small companies, 12% of medium-size companies and 34% large companies. The GUS data indicate also that companies take advantage of external sources in the innovative process in a limited degree. If companies already cooperate with external partners, these are most often their direct suppliers, recipients or other companies, and not external research and development units.

The Eurostat data show that the largest number of cooperation-based relations are developed by companies from the United Kingdom, with almost 21,000 (2008) various types of cooperation-based relations (Figure 1). The second place was taken by German companies, with French companies ranked third.

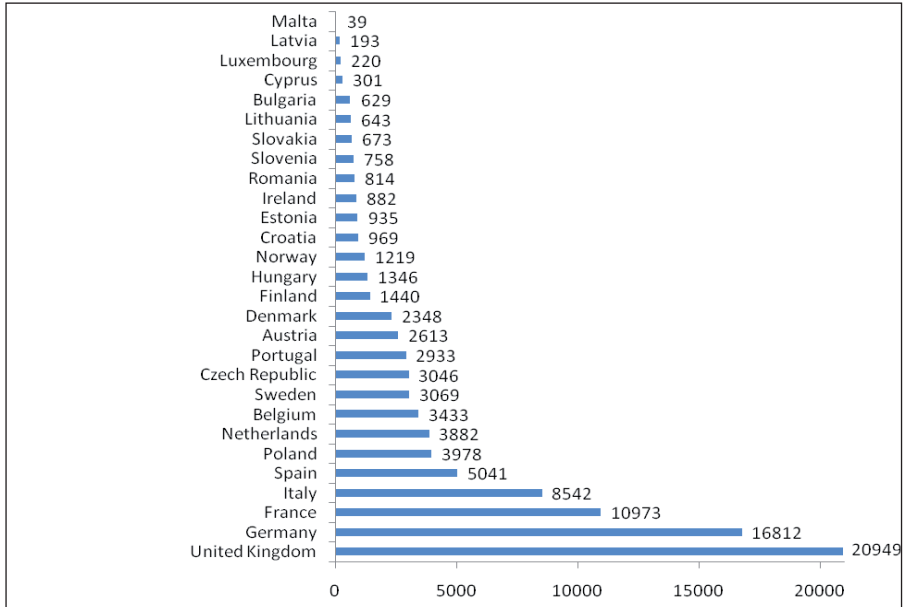


Figure 1. The number of all types of cooperation with participation of companies in European countries in 2008

Source: Author's own study on the basis of the Eurostat data.

To stimulate business to business cooperation and cooperation between entrepreneurs and business surroundings institutions, PARP (9) recommends, among others, improving quality of functioning of the legal surroundings of business, improving quality of functioning of research and development centres, stimulating cooperation with international investors and representatives of the administration.

#### 4. Types of innovations

Innovations may be broken down into groups by the type of change applied: innovations in products, processes, organisation, marketing, and eco-innovations. Product innovation means all types of changes which consists in improving products (goods and services) already in production in the company. Process innovations refer to changes in the methods of providing services or in the methods of manufacturing products applied by the company, as well as in the methods of reaching the recipients with the product (6).

On the basis of the GUS research (10) on innovative activities, it was found out that in the years 2006–2008 the share of companies which made product or process innovations dropped against the previous research period. In the sector of services it was about

16% as compared with 21% in the years 2002–2004, with 21% in the industry as compared with 23% in the previous period. Both in the industry and in the sector of services, innovations were made mostly in large companies. Small companies often cannot afford funding research and development works aimed at innovations.

The Eurostat data show that companies from Germany, Italy and the United Kingdom are most active in making process innovations (in processes and products) (Figure 2). In Poland, over 4200 companies made process innovations, thus giving Poland the 7th place among 27 analysed countries.

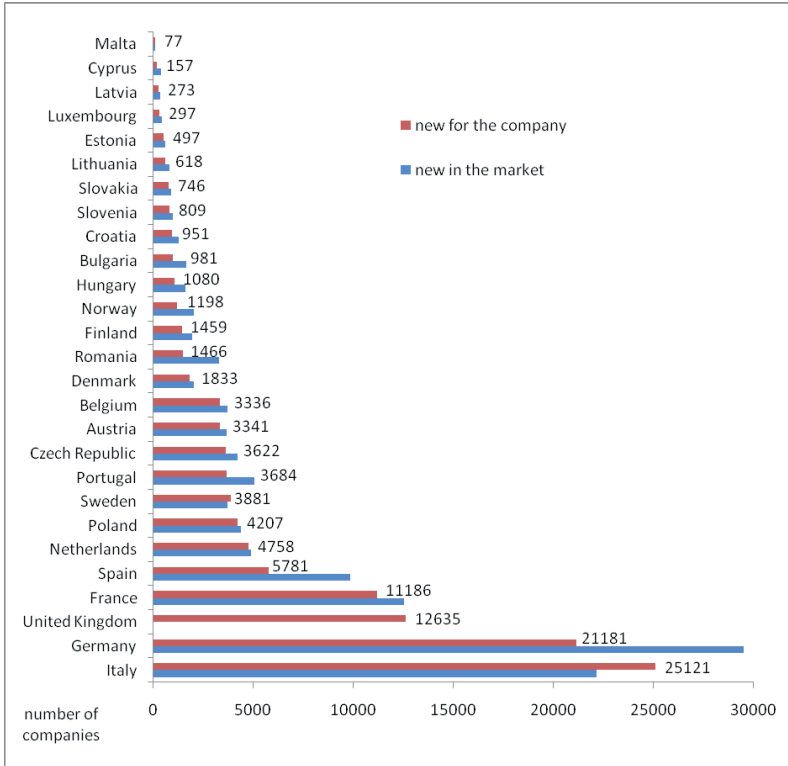


Figure 2. The number of companies with technological innovativeness (in process or product, current or discontinued) new only for the company and new in the market in European countries in 2008; the chart presents the number of companies with new innovations in the scale of the market

Source: Author’s own study on the basis of the Eurostat data.

According to the PKPP LEWIATAN, BRE Bank and Dun&Bradstreet research, the most innovative companies in the scope of process innovations were IBM Polska, Jotkel Krzywonos Jan, Jagiellonian University, “Damel”, Belma Accessories Systems, Gdańska Stocznia “Remontowa” im. Józefa Piłsudskiego [Gdańsk Shiprepair Yard “Remontowa” SA named after Józef Piłsudski] (11).

Another type of innovations is organisational innovativeness, which results from introducing a new method of organisation in the business practices of the company, workplace organisation or external relations. The GUS data for the period 2006–2008 (6) show that organisational innovations were made by about 44% of large companies in the industry and 43% in the sector of services. In medium-size companies, this type of innovations was made by 20% of companies active in the industry and 24% in the sector of services. Small companies which introduced organisational innovations constituted 9% in the industry and 12% in the sector of services. The most often made organisational innovations were new methods of allocation of task and decision rights.

The Eurostat data show that organisational innovations were most actively made by entrepreneurs from Germany, Italy and France (Figure 3). Polish entrepreneurs were ranked 8th among 28 European countries.

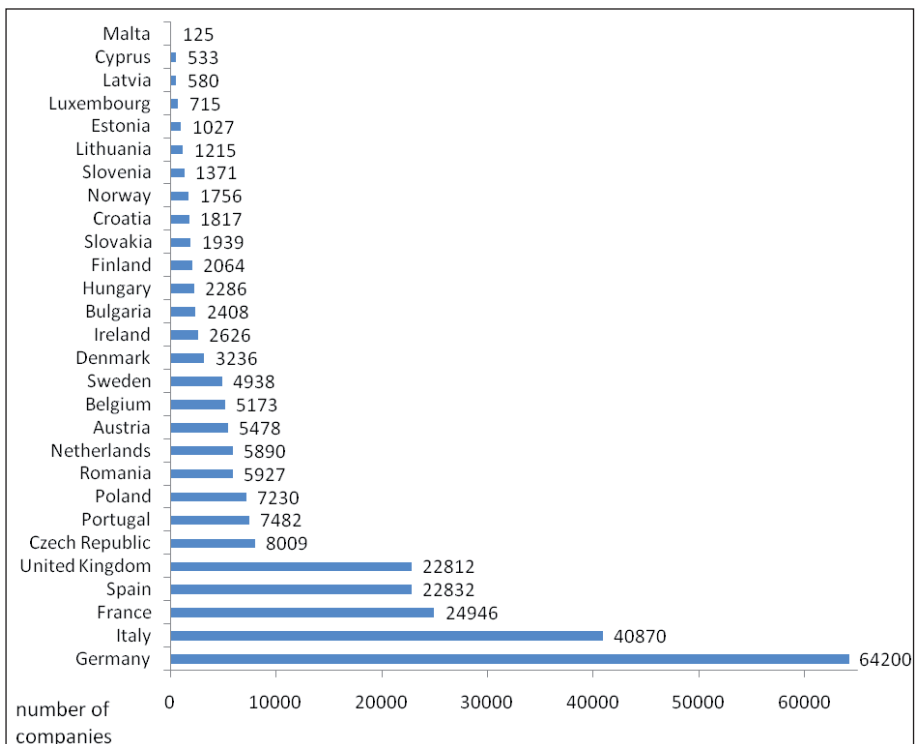


Figure 3. The number of companies making organisational innovations in European countries in 2008

Source: Author's own study on the basis of the Eurostat data.

The leaders among the most innovative companies in Poland (11) in terms of organisational innovations were ICN Polfa Rzeszów, Istrial and Zakład Produkcji Automatyki Sieciowej (Factory of Network Automatics).

Marketing innovativeness refers to design and packages, methods of sale of goods and services, promotion and advertising of goods and services, as well as methods (strategies) of defining prices for goods and services (6). According to the GUS data (6), marketing innovations in the years 2006–2008 were introduced in the industry by 33% of large companies, 17% of medium-size companies and 11% of small companies. In the sector of services, the share of companies introducing marketing innovations were as follows: 36%, 20%, 12%. The most frequent marketing innovations in the industry included new methods of defining prices for goods and services, and new media or techniques of product promotion in the sector of services.

The Eurostat data show that the largest number of companies introducing marketing innovations in 2008 were located in Germany and Italy (almost 36,000) (Figure 4). Poland, with its 7099 companies introducing marketing innovations, was ranked 7th among 26 European countries.

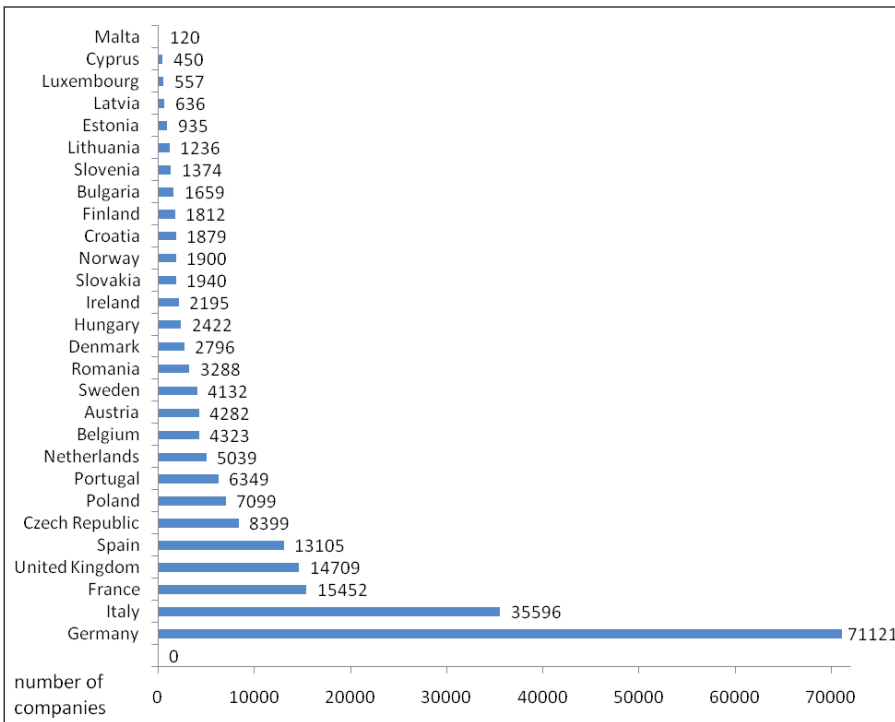


Figure 4. The number of companies introducing marketing innovations in European countries in 2008

Source: Author’s own study on the basis of the Eurostat data.

The leaders in the scope of marketing innovations, according to the “Kamerton Innowacyjności” research, are Gdańska Stocznia “Remontowa”, Fiat Auto Poland (Zakład Tychy) and Zakład Produkcji Automatyki Sieciowej (11).

The GUS research in the years 2006–2008 (6) showed a new category of innovations, the so-called eco-innovations, that is innovations which are beneficial for the environment, both during the period of product manufacturing, and during its use or application. Eco-innovations were introduced in over 26% of industrial companies and about 16% of companies functioning in the sector of services (6).

The largest share of innovative industrial companies was recorded in the Voivodeships: Masovian, Warmian-Masurian and Silesian (Figure 5). The lowest number of industrial companies introducing innovations was recorded in the area of the Voivodeships: Lubusz and Pomeranian.

Teresa Taranko (12) states that companies operating in Poland in the process of creating innovations mostly have their own R&D departments and employees who work on new solutions. She also noticed that innovative company show interest in cooperation with consulting companies but are close to cooperation with external surroundings.

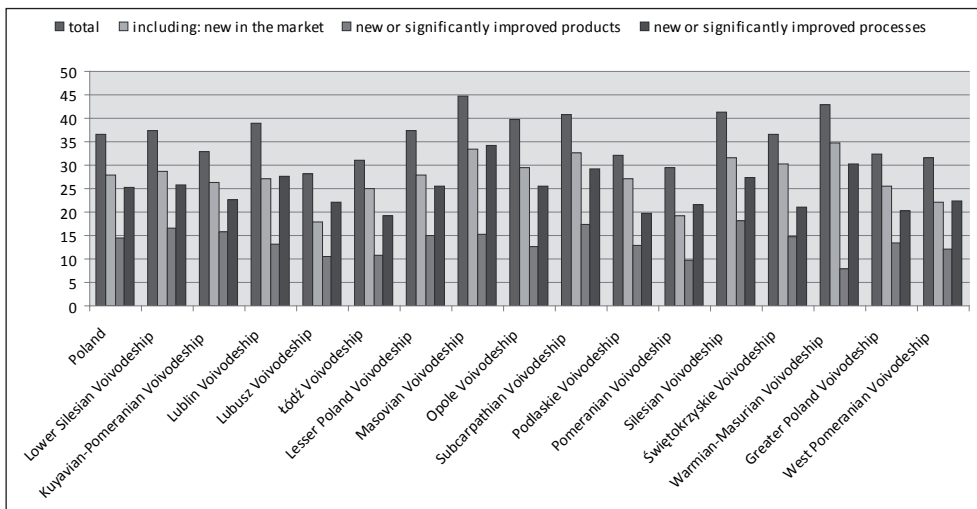


Figure 5. The structure of innovative companies in the industry by the types of innovations introduced and by voivodeships in the years 2005–2007, the companies which introduced innovations in % of the total number of companies

Source: Author's own study on the basis of (13).

The Eurostat data show that in the countries where the largest number of companies introduce innovations, the percentage of the companies discontinuing or suspending this activity is also highest. In 2008, 1424 companies in Italy dropped or halted their activities, and in Germany this applied to 1251 companies (Figure 6). 34 cases of companies discontinuing or suspending innovative activities were reported in Poland. The main problems with introduction of innovations in Poland, apart from legal and tax barriers, come from a small number of specialists implementing innova-



tive processes, financial limitations, and poor integration of scientific and economic circles. Another barrier is (14) low motivation of some entrepreneurs who in advance discredit the innovations in their companies.

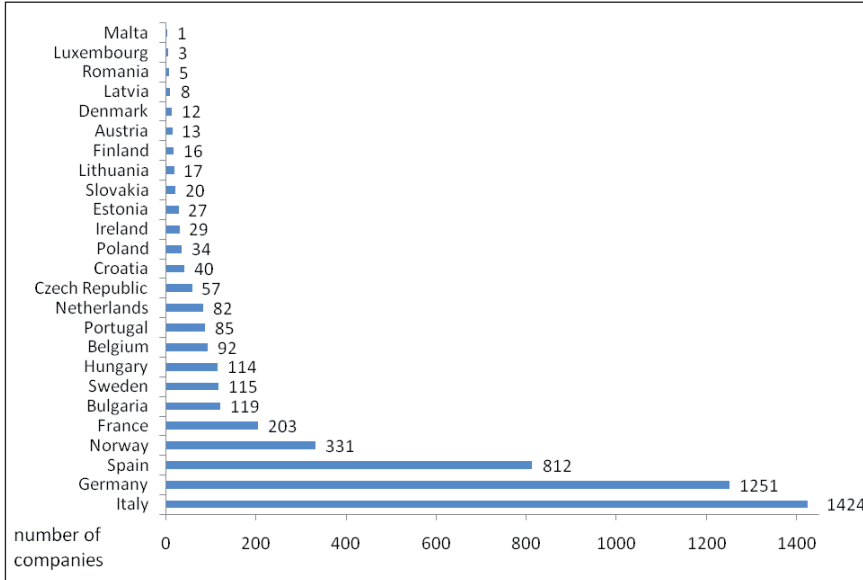


Figure 6. The number of companies discontinuing or suspending innovative activities before completion in 2008

Source: Author’s own study on the basis of the Eurostat data.

## 5. Expenditures for innovative activities

The GUS data indicate that expenditures for innovative activities in the industry in the years 1999–2008 increased from PLN 15,250 m to PLN 24,652 m. In 2009, expenses for innovative activities dropped by about 8 per cent points against the previous year, i.e. PLN 22,652 m.

Polish entrepreneurs manage innovative activities mostly based on modernisation of their machine resources (Figure 7). In 2000, expenditures for investments in machines, technical devices and tools and means of transport constituted 64% of the total expenses for innovative activities in industrial companies. The next category in terms of the amounts constituted buildings and building structures, with over 28% of the total expenses allocated for them in 2009. Over 8% of the total expenses was spent on research and development activities in industrial companies in 2009.

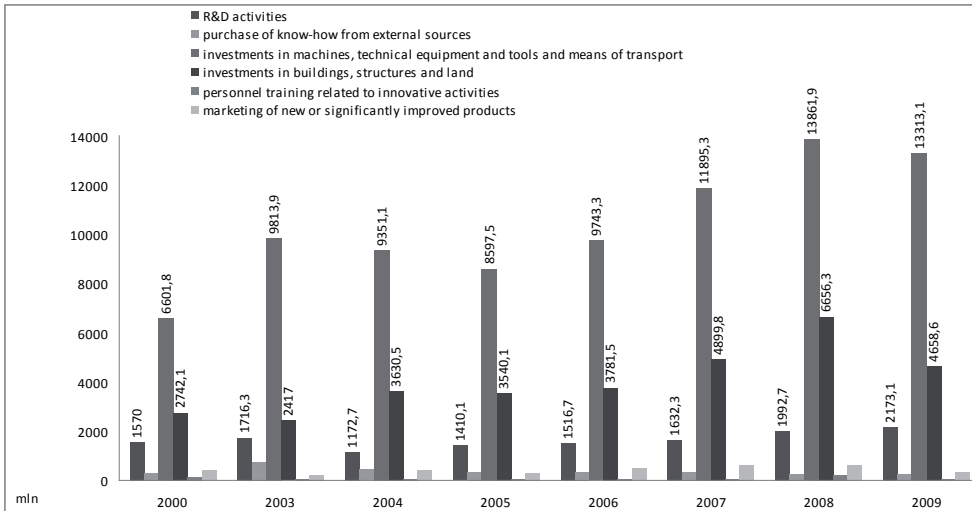


Figure 7. Expenditures for innovative activities in the scope of product and process innovations in industrial companies in selected years 2000–2009

Source: Author's own study on the basis of (15; 13).

## 6. Final remarks

Year by year, more and more innovative centres are coming into existence in the territory of Poland, along with their increasing specialisation. Expenditures for innovative activities in companies and the number of innovations made are also on the increase. Major regional differentiation has also been noticed. The Masovia and Silesia areas have the dominant role in innovative activities. Polish entrepreneurs have also been found rather unwilling to undertake cooperation in the scope of innovative activities with other units.

The leaders in introducing innovations are entrepreneurs from Germany, Italy, the United Kingdom, France and Spain. Polish entrepreneurs are ranked in the first ten European countries in terms of the number of innovations introduced.

## Bibliography

1. *Oslo Manual. Guidelines for Collecting and Interpreting Innovation Data*. 2005. OECD.
2. Pawlak E. 2009. "Innowacje w kulturze organizacyjnej mikro i małych przedsiębiorstw". In: *Innowacje jako źródło konkurencyjności nowoczesnego przedsiębiorstwa*. Ed. J. Szpon. Szczecin: Economicus. ISBN 978-83-60606-41-4.
3. Jasiński A. H. (ed.). 2009. *Innowacje małych i średnich przedsiębiorstw w świetle badań empirycznych*. Warszawa: Promocja XXI. ISBN 978-83-921491-6-3.

4. Osbert-Pociecha G. 2005. "Innowacyjność przedsiębiorstw". In: *Podstawy nauki o przedsiębiorstwie*. Ed. J. Lichtarski. Wrocław: Wydawnictwo Akademii Ekonomicznej we Wrocławiu. ISBN 83-7011-770-8.
5. Jastrzębska W. 2005. "Pobudzanie aktywności innowacyjnej małych i średnich przedsiębiorstw w teorii systemów innowacji i polityce innowacyjnej Unii Europejskiej". *Nierówności Społeczne a Wzrost Gospodarczy*, no. 7, Rzeszów: Uniwersytet Rzeszowski.
6. *Nauka i technika w 2008 r.* 2010. Warszawa: Główny Urząd Statystyczny.
7. Matusiak K. (ed.). 2009. *Ośrodki innowacji i przedsiębiorczości w Polsce*. Łódź and Warszawa: Polska Agencja Rozwoju Przedsiębiorczości.
8. Łączka I. 2009. "Jednostki badawczo-rozwojowe partnerami innowacyjnych MŚP". In: *Warunki skutecznej współpracy pomiędzy nauką a przedsiębiorstwami*. Ed. M. Bąk, P. Kulawczuk. Warszawa: Instytut Badań nad Demokracją i Przedsiębiorstwem Prywatnym, and Gdynia: Krajowa Fundacja Kultury Przedsiębiorczości. ISBN 978-83-927151-6-0.
9. Górzyński M., Pander W., Koć P. 2006. *Tworzenie związków kooperacyjnych między MSP oraz MSP i instytucjami otoczenia biznesu*. Warszawa: Polska Agencja Rozwoju Przedsiębiorczości. ISBN 83-60009-36-8.
10. GUS 2009. *Działalność innowacyjna przedsiębiorstw w latach 2006–2008*. Memo. Press conference materials of 2009-09-23.
11. Starczewska-Krzysztošek M. 2008. *Kamerton Innowacyjności 2008—Ranking Najbardziej Innowacyjnych Firm w Polsce*. Warszawa.
12. Taranko T. 2011. "Aktywność innowacyjna polskich przedsiębiorstw a ich udział w procesach konkurencyjnych". *Studia i Prace Kolegium Zarządzania i Finansów*, no. 106, pp. 28–50.
13. *Nauka i technika w 2007 r.* 2009. Warszawa: Główny Urząd Statystyczny.
14. Piekut M. 2010. "Innowacyjna przedsiębiorczość szansą rozwoju sektora MSP". *Ekonomika i Organizacja Gospodarki Żywnościowej*, no. 86, pp. 41–54.
15. *Rocznik Statystyczny Przemysłu*. 2009–2011. Warszawa: Główny Urząd Statystyczny. ISSN 1231-8957.

## Innowacyjność przedsiębiorstw w Polsce i w innych krajach europejskich

Streszczenie: Celem artykułu była analiza danych statystycznych dotyczących innowacyjności przedsiębiorców z Polski i z innych krajów europejskich. Do opracowania wykorzystano dane GUS-u i Eurostatu. Przeprowadzona analiza wykazała, że na terenie Polski przybywa ośrodków innowacyjności i są to jednostki coraz bardziej wyspecjalizowane. Polscy przedsiębiorcy stosunkowo rzadko podejmują współpracę w zakresie działalności innowacyjnej z innymi jednostkami. Zaobserwowano także, iż zwiększają się nakłady na działalność innowacyjną w przedsiębiorstwach; zwiększa się też ilość wprowadzanych innowacji. Dostrzega się jednak duże zróżnicowanie regionalne. Dominującą rolę w działalności innowacyjnej pełnią Mazowsze i Śląsk. Liderami we wprowadzaniu innowacji wśród krajów europejskich są przedsiębiorcy z Niemiec, Włoch, Wielkiej Brytanii, Francji i Hiszpanii.

---

---

Słowa kluczowe: innowacje, innowacyjność przedsiębiorstw, otoczenie biznesu

---

---

