Innovation and R&D activities in the Małopolska enterprises. Inventive operations in Małopolska

Summary

Małopolska Regional Development Observatory
Department of Regional Policy
Innovation and R&D activities in the Małopolska enterprises

Purpose of the Study

The main purpose of the study was to attempt a diagnosis of Malopolska enterprises’ interest in and their readiness to take up and implement innovation–oriented actions, as well as to analyse the level of interest in cooperation with research and development institutions and universities regarding innovation and implementation of new technologies. The results and conclusions of the study indicate the direction for future planning of activities, including co-financing from EU funds, taking into account pro-innovative and R&D services.

Methodology

The report has been developed on the basis of quantitative data collected from Malopolska companies, and on the basis of data obtained from the Central Statistical Office and the Polish Patent Office.

The study covered 450 enterprises registered within the area of the Małopolska region, and it was carried out using the computer assisted telephone interview (CATI) technique.

In order to analyse the status and structure of innovation-oriented activities, a list of data was acquired, regarding the number of submitted inventions, utility models, and awarded patents and protection laws for the whole of Poland, by administrative units, and for the poviats of Małopolska. In order to classify the innovation-oriented activity, the method of economic activity classification division was applied, adopting 35 technologies (developed by Dr Ulrich Schmoch), which is one of the most common techniques used in the classification process.

Readiness to Initiate and Implement Innovative and Technological Solutions in the Enterprises of Małopolska

According to the latest data from the Central Statistical Office from 2014, the average share of innovative enterprises in the general number of companies in the Małopolska region was 13.5%. In the same year, businesses from Małopolska generated 5.6% of national expenditure for innovative activities in enterprises. The percentage of employees hired in the field of research and development, compared to all employees, reached the level of 1.44, which places Malopolska the second in the country. The overwhelming majority of the companies from Małopolska do not have employees dedicated to research and development activity (84.2%). The employment of people responsible solely for research and developmental activity or having a separate research and development department is declared mainly by large enterprises, with at least 250 employees (32.0% and 40.0% respectively). Almost every third entrepreneur (29.8%) defined the company’s innovative or
technological advancement at the level of the nation-wide average. **Innovative activities, most often undertaken by the companies from Małopolska within the last 3 years, include:**

- introduction of a new product, service or production process or significant improvement of the existing one (26.4%),
- introduction of significant changes which are not technical innovations (21.1%),
- implementation of a new or significantly modified strategy for the enterprise's operation (16.4%).

**Developmental plans for Małopolska companies, based on interest in new or improved innovative and technological solutions**

Representatives of Małopolska enterprises declared that within the coming 2 years they plan to implement new products or services (44.7%), apply for the EU financing for development of innovations (40.2%), and to implement new technologies (40.2%). Less frequent plans include outsourcing related to R&D processes, and introduction of new products, services or technologies (26.3%), and implementation of R&D operations (22.5%). **The study identified especially high demand for free services in the area of seeking funding of research and development works (35.3%).** It means that every third company in the region would like to receive free support in obtaining external financial resources for the development of the company. Entities operating in Małopolska are also willing to use free help in establishing contacts with other entities that take care of innovative services and technologies (27.1%) and seeking partners with proper technological infrastructure (24.7%). Every fifth company operating within the region expressed its interest in the free counselling service within the scope of intellectual property protection (20.4%), and support in finding contractors for the studies or providers or other research and development services (18.9%).

**Needs and expectations towards the institutions offering services in the scope of innovations and new technologies development**

**Enterprises from Małopolska expect first of all taking their individual needs into consideration by external institutions providing innovative services.** This aspect of mutual cooperation is important for 85.5% of enterprises, which expressed the need for free services provided by specialised institutions within the next 2 years. Punctuality and professional service is of slightly lower importance but it is still significant, understood as phone, e-mail, and direct availability, which is important according to 80.1% enterprises. Complex approaches and high quality are important aspects of innovative services provided by external institutions, respectively for 74.1% and 73.4%.

**Level of cooperation between enterprises and R&D units, evaluation of its quality and identification of barriers**

The enterprises from Małopolska carrying out R&D activities between 2013 and 2015, most often did not use the help from external institutions, such as universities, R&D units, business support
institutions and other units (62.9%). Within last 2 years, the research and development cooperation with external units was established by every third enterprise implementing innovation. The companies implementing innovative solutions prefer independent design and implementation of their development path. Between 2013 and 2015, universities were key partners for R&D cooperation for Małopolska enterprises. Among the companies declaring cooperation with external units, as much as 47.8% turned to universities. Companies benefitting from external support also cooperated with national research and development units (38.8%) and business environment institutions (25.4%). Services from foreign research and development units (11.9%) and technology transfer centres (9.0%) were pointed out the least frequently (9.0%). The cause for establishment of cooperation with universities and national research and development units may be high quality of the services they provide. 24 out of 32 enterprises cooperating with universities between 2013 and 2015 are satisfied with the achieved results. 20 out of 26 declaring cooperation with national research and development units within last 2 years are happy with the obtained effects. Małopolska enterprises evaluated the quality of cooperation with business environment institutions positively as well. 13 out of 17 companies implementing such cooperation within last 2 years found the result as satisfying.

**Determination of the level of demand on specialist counselling service related to implementation of technological audits and broker services**

The Małopolska region plans to launch activities that are intended to stimulate innovation and implementation of new technologies by the Małopolska enterprises, utilising the potential of universities. A proposal of implementing technological audit and knowledge transfer services has been developed as a part of this initiative. The services will be provided free of charge by the Knowledge Transfer Centres located at universities, within de minimis aid. The technological audit is a service that allows to evaluate the current technological potential of a company as well as to identify its strengths and weaknesses. As a result of the technological audit carried out in cooperation with the Knowledge Transfer Centre, it will be possible to recognise optimum paths for enterprise development, and to improve production or achieve service efficiency. The knowledge transfer service allows for the matching of company needs with the technological solutions that are available on the market.

As a part of such cooperation, the Knowledge Transfer Centre will seek technologies supporting enterprise development, organise specialist expert consultations, and help in the establishment of business contacts, both national and foreign, to improve the innovative nature of the company and expand their outlets. 156 out of 282 Małopolska companies are interested in the possibility to utilise free service provided by the external institutions agreed to receive the proposals via electronic means (55.3%), and 24% gave an additional evaluation interview by telephone. Out of the group of respondents who took part in the second wave of research (intended to assess the innovative services offer), 35% expressed their interest in using the technological audit, while 37.8% were interested in technological transfer.
Malopolska occupies fifth place in the country with regard to inventive operations, and its scientific and R&D potential allows its promotion by 2 positions.

The number of reported inventions and utility models is a reflection of the economy’s innovative nature - these actions must be supported in local centres, based on the potential and needs of the enterprise sector, in order to maintain sustainable development. **2,336 inventions and 692 utility models** were submitted between 2008 and 2014 in Malopolska. It comprises 9.3% of the inventions and 11.6% of utility models submitted in that period in the whole country. These numbers position Malopolska in fifth place with regards to the scope of inventions, after Mazowieckie, Śląskie, Wielkopolskie and Dolnośląskie, and in third place in terms of utility models, after Mazowieckie and Śląskie.

Between 2008 and 2014, the Polish Patent Office issued **1,232 patents for inventions** and **437 protection rights for utility models**, applied for by units from the Malopolska region. It accounts for 9.4% of all patents and 11.8% of all protection rights for utility models provided in Poland in that period.

Malopolska submitted the highest number of inventions nation-wide within a single sector – “Materials and metallurgy”.

Naturally, Cracow remains an absolute leader in terms of the number of submitted inventions and utility models. However, development of satellite centres with a strong position in comparison to the rest of the region is visible: Nowy Sącz and the Nowosądecki poviat, Tarnów and the Tarnowski poviat, Krakowski and Olkuski poviaś.

Generally speaking, between 2008 and 2013, most poviaśes faced an increase in the number of reported inventions and utility models, while 2014 was the year of a slight breakdown. This most probably results from the fact that according to the legal provisions, classification of data in the Polish Patent Office can take up to 18 months; thus 2014 could have not been fully classified yet.

Among the Malopolska companies which declared their intention to implement innovative solutions within the coming 2 years (2016-2017), almost 29% enterprises plan to exercise intellectual property protection rights, **where more than half predict actions related to copyrights (56.8%) and trade names (53.1%)**. The enterprises of Malopolska expressing their interest in intellectual property protection also pointed to such forms as patents (49.4%), utility models (44.4%) and trade marks (40.7%). The lowest number of companies plan to implement integrated circuit layout design protection (2.5%).