

Acquisition of European Union Funds for Knowledge Transfer by Enterprises from Opolskie Voivodship

Aleksandra Zygmunt, Mirosława Szewczyk

Opole University of Technology, Poland

Abstract

The main purpose of the paper is the analysis of enterprises from Opolskie Voivodship in the context of their acquisition of European Union funds for knowledge transfer. First, the range of knowledge transfer in regional development is emphasized. Afterwards, an analysis is made of Opolskie Voivodship enterprises in the range of the major Operational Programme Innovative Economy priorities connected with knowledge transfer. Particular attention is paid to such priorities as: R&TD activities lead by research centers; technology transfer and improvement of the network of cooperation between SMEs, SMEs and other enterprises, universities and post-secondary schools, regional authorities, research centers and technology and research parks; support for R&TD development (especially in SMEs); and investment in enterprises connected especially with research and innovation. The study uses data from KSI SIMIK concerning the Operational Programme Innovative Economy.

Keywords: knowledge transfer, Operational Programme Innovative Economy, enterprise, Opolskie Voivodship

Introduction

Region development is a special interest of the European Union. This is especially seen in the establishments of the Lisbon Strategy and Strategy for Europe 2020, which leads to an increased level of European competitiveness. In that area special attention is drawn to the transfer of knowledge, which might constitute a substantial determinant of regional development.

The main aim of this article is the analysis of the acquisition of European Union funds for knowledge transfer by enterprises from Opolskie Voivodship. The research contains mainly directions of funds for knowledge transfer, volume of acquisition and characteristics of enterprises (spatial structure, age, sector of activity and size). The characteristics of enterprises such as age, sector of activity and size are of key importance to innovatory processes (Criscuolo, Nicolaou, and Salter 2012, 319–333). In the specialist literature of the subject, one can also find empirical evidence of the appearance of correlations between growth, age and level of innovative activity (Goktan and Miles 2011, 533–547; Heshmati 2001, 213–228; Huarng and Yu 2011, 284–296; Naranjo-Valencia, Jimenez-Jimenez, and Sanz-Valle 2011, 55–72). The analysis is based on data from KSI SIMIK (a system of electronic registration of applications for co-financing from EU funds) for the Operational Programme Innovative Economy (on the date: 2014.04.31). The objective of the Operational Programme Innovative Economy is the development of the Polish economy based on innovative enterprises.

1 Knowledge transfer as an important regional development determinant

Although several determinants impact regional development, a significant role is played by factors connected with the endogenic ability to react to changes occurring in the macro-environment. Taking into account the changes in global economies these entities should be treated as the leading players. Their connection with the development capacity of a region's resources should be

revealed in improvement of the competitive position of a region. According to D. Strahl (2006, 16), among the most considerable determinants which define regional ability to react to changes in their macro-environment are mentioned demographical resources, the regional eco-system, infrastructure, regional zoning and regional economic systems. Apart from other endogenic entities, a special range of such determinants should be pointed out which take part in a regional economic system, especially those connected with innovations and the ability to create and/or transfer knowledge.

Nowadays, the range of innovation and knowledge transfer in regional development is apparent. The particular significance is connected with growing international competition, which influences not only regions but also enterprises which have established their business in the region (Zygmunt 2013a, 1–7; 2013b, 129–134; 2013c, 1002) and impacts enterprises' delocalization processes (Klomens 2012, 26). The innovativeness of enterprises and knowledge transfer in a regional innovation system, which are observed in Opolskie Voivodship, have been made the subject of numerous analyses (Adamska, Dymek, and Szewczuk-Stępień 2013, 30–48; Jasińska-Biliczak 2013, 229–238; Łobos and Szewczyk 2012, 53–71; Widera and Szewczyk 2011, 41–48).

Knowledge transfer is usually defined as creation and uptake of new knowledge, which normally is connected with simply the use of technology (Gopalakrishnan and Santoro 2004, 57–69). Within the literature, knowledge transfer can be distinguished by process, in which one authority might be affected by the experience of another (Argote and Ingram 2000, 150–169). These processes are usually displayed in collaborations between enterprises and universities or research institutions. On the enterprise side, knowledge transfer exists at many levels of organizational structure (Xu and Ma 2008, 529) and supports the decision-making process (Landry, Amara, and Ouimet 2007, 565). All of the above lead to the conclusion that knowledge transfer improves enterprises' innovative behavior. Consequently, knowledge transfer contributes to systematic competitiveness adjustment, which influences regional development.

2 The methodology of the analysis

The research is concentrated on the analysis of enterprises from Opolskie Voivodship in the context of the acquisition of European Union funds for knowledge transfer. For the analysis, companies were selected do business in Opolskie Voivodship and have accessed financial resources for knowledge transfer from the Operational Programme Innovative Economy in the period 2007–2013. Consequently, the following Operational Programme Innovative Economy priorities were taken into account:

- 01 — R&TD activity lead by research centers
- 03 — technology transfer and improvement of the network of cooperation between SMEs, SMEs and other enterprises, universities and post-secondary schools, regional authorities, research centers and technological and research parks
- 04 — support for R&TD development (especially among SMEs)
- 07 — investment in enterprises connected especially with research and innovation

In the analysis the data originated from the Operational Programme Innovative Economy (on the date: 2014.04.31). The studies were divided into two parts. At first, a comparison was made of European Union funds for knowledge transfer acquisition between enterprises from Opolskie Voivodship and other organizations. Secondly, analysis was made of the acquisition of European Union funds for knowledge transfer by companies which conduct their activity in Opolskie Voivodship. Special attention was drawn to the directions of funds for knowledge transfer, volume of acquisition, characteristics of enterprises (spatial structure, age, sector of activity and size). Measures of position were used in the analysis.

3 Characteristics of enterprises from Opolskie Voivodship in the acquisition of European Union funds for knowledge transfer

The resulting analysis provides for the conclusion that companies from Opolskie Voivodship support their innovation potential by obtaining European Union funds for knowledge transfer from

two priorities of the Operational Programme Innovative Economy: 04 — support for R&TD development (especially among SMEs) and 07 — investment in enterprises connected especially with research and innovation (fig. 1).

The results show that in the period 2007–2013 most enterprises from Opolskie Voivodship which benefited from Operational Programme Innovative Economy in knowledge transfer acquired support mainly for activities concerning investment in enterprises connected especially with research and innovation (25 enterprises of 41 in total).

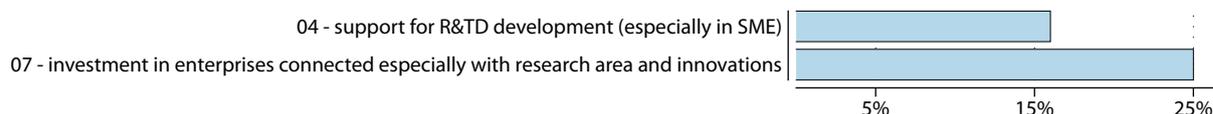


Fig. 1. Enterprises from Opolskie Voivodship which acquired funds for knowledge transfer from Operational Programme Innovative Economy (in the period 2007–2013) — in priorities section

Source: own calculations on the basis of data from Operational Programme Innovative Economy

The calculations indicate the higher value of European Union fund acquisition by companies from Opolskie Voivodship in knowledge transfer connected with investment in enterprises related especially with research and innovation rather than support for R&TD development (especially among SMEs) (tab. 1). According to the analysis, three quarters of Opolskie Voivodship's enterprises obtained European Union funds for investment in enterprises connected especially with research and innovation at a value higher than PLN 1 714 403,25, while for support for R&TD development (especially among SMEs) PLN 145 040,62.¹

The differences between the values of projects are especially seen in the analysis of their average values. During the period 2007–2013 the average value of European fund acquisition for knowledge transfer in support for R&TD development (especially among SMEs) by enterprises from Opole Voivodship constituted a value of PLN 1 418 166,48, while projects for investment in enterprises connected especially with research and innovation were characterized by an average value of PLN 9 838 763,47.

Tab. 1. Presentation of position measures of acquisition European Union funds for knowledge transfer by enterprises from Opolskie Voivodship (in PLN)

| Retrieval | 04—support for R&TD development (especially among SMEs) | 07—investment in enterprises connected especially with research and innovation |
|-----------------|---|--|
| Minimum | 60 904,63 | 245 735,00 |
| Maximum | 6 144 820,00 | 106 615 472,20 |
| Mean | 1 418 166,48 | 9 838 763,47 |
| First Quartile | 145 040,62 | 1 714 403,25 |
| Second Quartile | 414 708,01 | 3 400 000,00 |
| Third Quartile | 3 005 503,31 | 12 209 554,06 |

Source: own calculations on the basis of data from Operational Programme Innovative Economy

4 The spatial structure, branch structure, and the age of enterprises

It was accepted that the reflection of the spatial structure is the territorial distribution of entities, and also the value of the projects. The analysis of the branch structure was carried out taking Polska Klasyfikacja Działalności (PKD)/Polish Classification of Activities/into consideration. The PKD code of the enterprise was established for each entity on the basis of the HBI Polska database.

1. [In the journal (in both Polish and English texts) European practice of number notation is followed—for example, 36 333,33 (European style) = 36 333.33 (Canadian style) = 36,333.33 (US and British style). Furthermore in the International System of Units (SI units), fixed spaces rather than commas are used to mark off groups of three digits, both to the left and to the right of the decimal point.—Ed.]

The number of projects realized within Priorities 04 and 07 is the highest in the Kędzierzyn-Koźle County (tab. 2 and 3). On the other hand, the value of the projects realized within Priority 04 was the highest in the urban district of Opole City (tab. 2).

As far as Priority 07 (investment in enterprises connected especially with research and innovation) is concerned, a distinct concentration in the Strzelce Opolskie County (tab. 3) is visible as regards the value of the realized projects. The following two largest investments in Opolskie Voivodship have been of considerable importance in this respect:

- “Construction of works on the basis of the innovative technology of oriented strand boards” (beneficiary: Kronospan OSB Sp. z o.o.; the value of the project—PLN 432 million; additional funding from the EU—PLN 106,6 million; the date of completion of the project—2015.07.31). The European Commission had to issue an agreement for Poland to assign funds in the case of such a big project—the agreement was issued on 10 April 2013). Kronospan OSB Sp. z o.o. is an enterprise belonging to Kronospan Group, which is known for its manufacture of wood-based and finishing products. In 2007, the Kronospan Concern purchased 64 ha of grounds in Strzelce Opolskie, which was included in the Katowice Special Economic Area.
- “Establishment of the innovative Centre of Anti-Corrosive Insulations of steel pipes by Izostal” (beneficiary: Izostal; the value of the project—PLN 86,3 million; additional funding from the EU—PLN 18,0 million; the project realized in the years 2008–2009). The company Izostal SA deals with distribution of steel pipes, metallurgic and steel products.

The results of the study point to the existence of correlations between the age, the size of the company and its funding from the Operational Programme Innovative Economy. The share of long-established, medium-sized and large enterprises is considerable among the beneficiaries of the Programme.

Tab. 2. Number of projects, number of beneficiaries and the value of projects realized within Priority 04—support for R&TD development (especially among SMEs)

| County | Number of projects | Number of beneficiaries | Value of projects (million PLN) |
|---------------------------|--------------------|-------------------------|---------------------------------|
| Brzeg | 1 | 1 | 12,01 |
| Głubczyce | 1 | 1 | 0,42 |
| Kędzierzyn-Koźle | 4 | 3 | 14,45 |
| Krapkowice | 2 | 2 | 1,76 |
| Urban District of Opole | 3 | 3 | 17,39 |
| Olesno | 1 | 1 | 0,26 |
| Opole | 4 | 3 | 10,15 |
| Strzelce Opolskie | 2 | 2 | 1,91 |

Source: own calculations on the basis of data from Operational Programme Innovative Economy

Tab. 3. Number of projects, number of beneficiaries and the value of the projects realized within Priority 07—investment in enterprises connected especially with research and innovation

| County | Number of projects | Number of beneficiaries | Value of projects (million PLN) |
|---------------------------|--------------------|-------------------------|---------------------------------|
| Brzeg | 5 | 4 | 17,97 |
| Głubczyce | 1 | 1 | 10,28 |
| Kędzierzyn-Koźle | 7 | 6 | 211,96 |
| Krapkowice | 5 | 5 | 60,6 |
| Nysa | 3 | 1 | 37,81 |
| Olesno | 2 | 2 | 7,02 |
| Opole | 3 | 2 | 56,69 |
| Strzelce Opolskie | 5 | 4 | 582,35 |

Source: own calculations on the basis of data from Operational Programme Innovative Economy

In the case of Priority 04 (support for R&TD development) as many as 75% of the enterprises are at least 10 years old, and half of the companies are at least 17.5 years old. The youngest enterprise was established 4 years ago and the oldest—69 years ago.

As regards Priority 07 (investment in enterprises connected especially with research and innovation) as many as 75% of the enterprises are at least 12 years old, while half are at least 17 years old. The youngest company was established 7 years ago and the oldest—69 years ago.

Tab. 4. Descriptive characteristics of the age of beneficiaries

| Retrieval | 04—support for R&TD development (especially among SMEs) | 07—investment in enterprises connected especially with research and innovation |
|-----------------|---|--|
| Minimum | 4,0 | 7,0 |
| Maximum | 69,0 | 69,0 |
| Mean | 22,6 | 20,0 |
| First Quartile | 10,0 | 12,0 |
| Second Quartile | 17,5 | 17,0 |
| Third Quartile | 23,3 | 21,0 |

Source: own calculations on the base of data from Operational Programme Innovative Economy and HBI Polska base

It was possible mainly for large and medium-sized enterprises to obtain the means allotted within Operational Programme Innovative Economy for actions related to transfer of knowledge. These companies make 63% of the beneficiaries within Priority 04 (support for R&TD development) and 75% as far as Priority 07 (investment in enterprises connected especially with research area and innovation) is concerned.

Tab. 5. Structure of beneficiaries due to the size of the enterprise

| Retrieval | 04—support for R&TD development (especially among SMEs) | 07—investment in enterprises connected especially with research and innovation |
|-----------------|---|--|
| Micro and small | 6 | 6 |
| Medium-sized | 6 | 12 |
| Large | 4 | 7 |

Source: own calculations on the base of data from Operational Programme Innovative Economy

The majority of beneficiaries deal with industrial processing. The share of enterprises dealing with manufacture of basic metals, manufacture of fabricated metal products, manufacture of rubber and plastic products (tab. 6) is considerable.

There are relatively few entities active in Opolskie Voivodship which are able to obtain means from Operational Programme Innovative Economy to finance actions related to transfer of knowledge. Among those which have managed to obtain the means dominate industrial companies of medium-low technology.

Conclusions

Most enterprises from Opolskie Voivodship—beneficiaries of Operational Programme Innovative Economy in the knowledge transfer area—acquired support mainly for investment in research and innovation. Recognition of the spatial structure, the branch structure, as well as the age structure of enterprises plays a vital diagnostic role. The number of projects realized within Priorities 04 and 07 is the highest in the Kędzierzyn-Koźle County. The value of the projects realized within Priority 04 (support for R&TD development) was the highest in the urban district of Opole City. The value of the projects realized within Priority 07 (investment in enterprises connected especially with research and innovation) was the highest in the Strzelce Opolskie County. The share

Tab. 6. Structure of beneficiaries due to the size of the enterprise

| Specification | 04— support for R&TD development (especially among SMEs) | 07— investment in enterprises connected especially with research and innovation |
|---|--|---|
| Manufacturing | | |
| Manufacture of machinery and equipment (MHT) | 2 | 0 |
| Manufacture of electrical equipment (MHT) | 1 | 2 |
| Manufacture of motor vehicles, trailers and semi-trailers (MHT) | 1 | 1 |
| Manufacture of rubber and plastic products (MLT). | 2 | 6 |
| Manufacture of basic metals, Manufacture of fabricated metal products, except machinery and equipment (MLT) | 3 | 7 |
| Manufacture of other non-metallic mineral products (MLT). | 1 | 2 |
| Manufacture of wood and of products of wood and cork (LT) | 0 | 4 |
| Printing and reproduction of recorded media (LT) | 0 | 1 |
| Other manufacturing (LT) | 1 | 0 |
| Other | | |
| Waste collection, treatment and disposal activities; materials recovery | 0 | 1 |
| Construction of buildings | 1 | 1 |
| Civil engineering | 1 | 0 |
| Technical testing and analysis. | 1 | 0 |
| Scientific research and development | 1 | 0 |
| Other professional, scientific and technical activities | 1 | 0 |

Note: The degree of technological intensity of the industrial companies was analyzed with the use of the Eurostat classification: high-technology (HT), medium-high-technology (MHT), medium-low-technology (MLT) and low-technology (LT) (see: Eurostat indicators of High-tech industry and knowledge—intensive services, January 2014. Annex 3—High-tech aggregation by NACE Rev. 2, [[:] http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/Annexes/htec_esms_an3.pdf, [accessed 2014.06.25].

Source: own calculations on the basis of data from Operational Programme Innovative Economy and HBI Polska database

of long-established, medium-sized and large enterprises is considerable among the beneficiaries of Operational Programme Innovative Economy. Among the beneficiaries of the Programme there is no enterprise representing the high-tech sector. On the other hand, it is the share of high-tech products in exports that is considered to be one of the basic determinants of the modernity and competitiveness of an economy. It appears that as far as transfer of knowledge on the domestic level is concerned, companies of the medium-low technology are doing the best and it is most probably they which will play the most significant role in the development of Opolskie Voivodship.

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