KNOWLEDGE-INTENSIVE BUSINESS SERVICES AS IMPORTANT SERVICES FOR INNOVATION AND ECONOMIC GROWTH IN SLOVAKIA

Tatiana Čorejová[1], Mario Al Kassiri[2]

Abstract: This paper illustrates the importance of Knowledge-intensive business services (KIBS) as a source of innovation and economic growth. In the article, we explain the impact of KIBS on innovation, the importance of KIBS as a support in economic growth, its positive impact on employment and important role in the knowledge-based economy of Slovakia. This paper shows KIBS as important for innovation processes provided by institutions, such as universities, where the most important part involves research and development. Low support in services such as KIBS may cause decreases in availability of highly qualified employees and output of knowledge for innovation. Productivity and economic growth are largely dependent on fast growing technological progress and transfer of knowledge. Innovation can lead to a reduction in manual workers on one hand, while on the other qualified employees will be needed for processes in the new applied technology. In order to fully understand the rapid growth of innovation and KIBS, we analyzed the correlation and number of scientists of its population in the EU countries.

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Introduction

At length, innovation research has mostly concentrated on the manufacturing sector, in particular high-tech industries, and technological innovation, while neither the service sector nor non-technological innovations have been considered in detail. However, this situation has drastically changed in both science and policy as interest in knowledge-intensive services (KIS) and knowledge-intensive business services (KIBS), in particular, has grown over the last 15 to 20 years, as reflected by the number of publications in this area (European Commission, 2012).

Knowledge-intensive services are services based on the use of specific knowledge or expertise in a particular technology or social event. The characteristic services of this kind, according to Hečková and Huttmanová (2008), include:

- services related to a company's accounting, auditing, or other similar service essential for corporate governance;
- consulting activities in the field of managing enterprises and protecting intellectual property;
- technical engineering services;
- research and development (R & D) activities, especially those that are commercially oriented;
- services for the development and application of communication and information technologies;
- legal advisory services; and
- financial services, particularly banking, insurance, and securities trading.

The Importance of KIBS in Economics

The importance and position of the knowledge-intensive services in the European Union (EU) economy has been the subject of debate among the scientific and professional community. With efforts in building a "knowledge economy" over the past two decades, the growing trends in developed economies, such as the EU and the new member states, have resulted in knowledge-intensive business-services (Hečková & Huttmanová, 2008).

The KIBS have produced and diffused knowledge, crucial for innovation. The increasing importance of knowledge-intensive services constitutes a characteristic in the raise of this "knowledge economy" (Muller & Zenker, 2001).

[1] Tatiana Čorejová, University of Žilina, Univerzitná 8215/1 010 26 Žilina, Faculty of Operation and Economics of Transport and Communications, tatiana.corejova@fpedas.uniza.sk
[2] Mario Al Kassiri, University of Žilina, Univerzitná 8215/1 010 26 Žilina, Faculty of Operation and Economics of Transport and Communications, mario.alkassiri@fpedas.uniza.sk

It is important to understand why changes occur and why companies innovate. There is a need for steady income, increasing competitiveness, reducing costs, and increasing production processes. A company that has unique intellectual property can become a monopoly with its knowledge. At the same time, companies that are forced to review their continuing search for new solutions, tend to innovate and expand in order to achieve a competitive advantage. States and organizations also need to create

an innovative environment and to constantly improve their management of resources for a better position and interest in global issues. Slovakia is a small open economy that depends on exports and foreign investment. Its competitiveness now stands primarily on a comparative advantage of relatively low labor costs, while the labor force is relatively well educated and skilled. In the future, however, competitiveness will be increasingly conditioned by knowledge, abilities, and skills in innovation.

Slovakia had increased its innovation index, particularly through the use of high technologies, with foreign investment in the automotive industry. Knowledge creation and its application in innovation often occur outside Slovakia, which has a small component of expenditure allocated to research and development, as well as in education through public and private sources. Slovakia has, reportedly, slow growth in its share of patents compared with other countries. Patents are exclusive rights offered to the public and relate to high knowledge in technical resources that are available worldwide (UPV, 2015).

The future of economic growth is dependent on knowledge-intensive services and their activities in creating jobs in the global market. The important corporations are constantly developing knowledge-intensive services and generating continued innovation.

The concept of capitalism tends to be ideological and therefore distorted. The owners of the means of production, historically, defined the economic system at work. Consistent with Marx's definition, capitalism is an economic system in which ownership of productive goods and services is privatized. When that intellectual property strategy is aligned with the business and innovation strategies of a firm, proper implementation of such will drive the value of the firm and improve the firm's competitive position. Regardless of their business strategy, most firms will claim to be innovative, and in many respects they are, even without an expressed innovation strategy (Tidd, Bessant, & Pavitt, 2007).

However, not all companies can afford to invest in their own R & D. Large organizations with multi-million-dollar research and development allocations have had to search for external resources and build external linkages.

Knowledge-intensive service activities play several important roles in innovation. There serve as sources of innovation through initiating and developing innovation activities in client organizations. They facilitate innovation when they support an organization in the innovation process. Similarly, they serve as promoters of innovation when they aid the transfer of existing knowledge among or within organizations, industries, or networks, for application in a new context (OECD, 2014).

In Table 1, we compare the member countries with regard to the trend of population and employment in R&D over 2013, from data of Eurostat. We examined the impact of the macroeconomic indicator (population) on employment in R&D during 2013. It should be noted that countries such as Germany (360 310), France (265 177), and Britain (259 347), had the greatest number of employees during 2013 in R & D, while, on the contrary, countries such as Malta (878), Cyprus (885), Luxembourg (2615), and Latvia (3625) were those with the fewest number of employees in R & D during 2013.

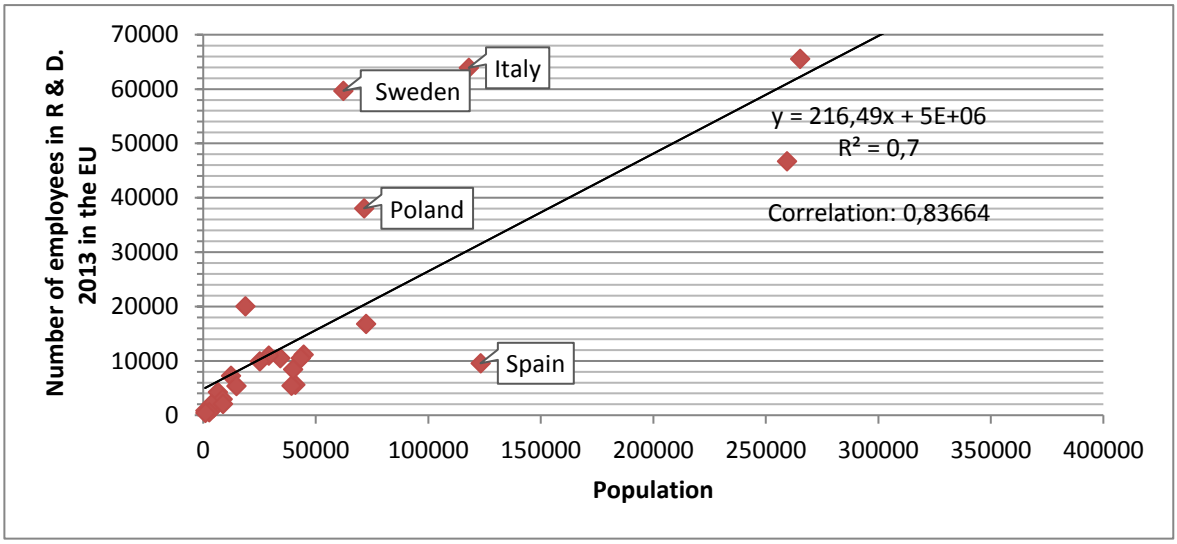
Table 1: Number of employees in research and development (R & D) during 2013 in the European Union

Country	Number of employees in R & D in 2013	Population in 2013
Belgium	44,649	11,161,642
Bulgaria	12,275	7,284,552
Cyprus	885	865,878
Czech Republic	34,271	10,516,125
Denmark	40,858	5,602,628

Estonia	4,407	1,320,174
Finland	39,196	5,426,674
France	265,177	65,560,721
Greece	29,055	10,991,400
Netherlands	72,325	16,779,575
Croatia	6,529	4,262,140
Ireland	-	4,591,087
Lithuania	8,557	2,971,905
Latvia	3,625	2,023,825
Luxembourg	2,615	537,039
Hungary	25,038	9,908,798
Malta	878	421,364
Germany	360,310	80,523,746
Poland	71,472	38,062,535
Portugal	43,321	10,487,289
Austria	39,923	8,451,860
Romania	18,704	20,020,074
Slovakia	14,727	5,410,836
Slovenia	8,707	2,058,821
Great Britain	259,347	46,727,890
Spain	123,225	9,555,893
Sweden	62,294	59,685,227
Italy	117,973	63,905,297

Source: OECD (2014)

Figure 1: The correlation of the population and employment in research and development (R & D)



Source: Author

Figure 1 shows a positive correlation of 0.837, for EU member states, between population and employment in R & D. The analysis shows that the overall growth of the population can impact on employment in the KIBS. The KIBS innovation index is important as an economic indicator in Slovakia as well as important information for investing for the foreign investor in the country.

Multinational companies are changing faster than ever before, primarily because of the advancement and technological innovation, it will be necessary to demonstrate the ability to work together and bring to our market new and innovative technologies. Together they would invest and build business centers of excellence in its category, which will be in addition to the basic components to support innovation, the domestic supply chain, and European universities (Euractiv, 2016).

Table 2 shows that countries with the lowest averages from 2008–2013 include Cyprus (0.75), Luxemburg (0.85), Greece (1.43), and Latvia (1.53), while countries such as Slovenia (8.42), Slovakia (9.52), Germany (9.52), and Czech Republic (10.13) have the largest number of employees in KIBS. This may be due to foreign investors, who create working places and at the same time places for new KIBS, though foreign investor headquarters mostly remain in the country of the investor.

Figure 1 is also based on the given data from the Eurostat table, and shows employment in KIBS compared to overall employment in countries of EU. This shows Slovakia is a country of priority in employment in KIBS as it ranks high in these services. This is primarily due to the automotive industry that uses these services and which are specifically connected with universities that provide these services. The largest increase in these services for Slovakia was recorded in 2008 and 2012, whereas the largest decrease was recorded in 2009-2010.

Table 2: Employment in knowledge-intensive business services compared to total employment in the European Union, from 2008-2013 (%)

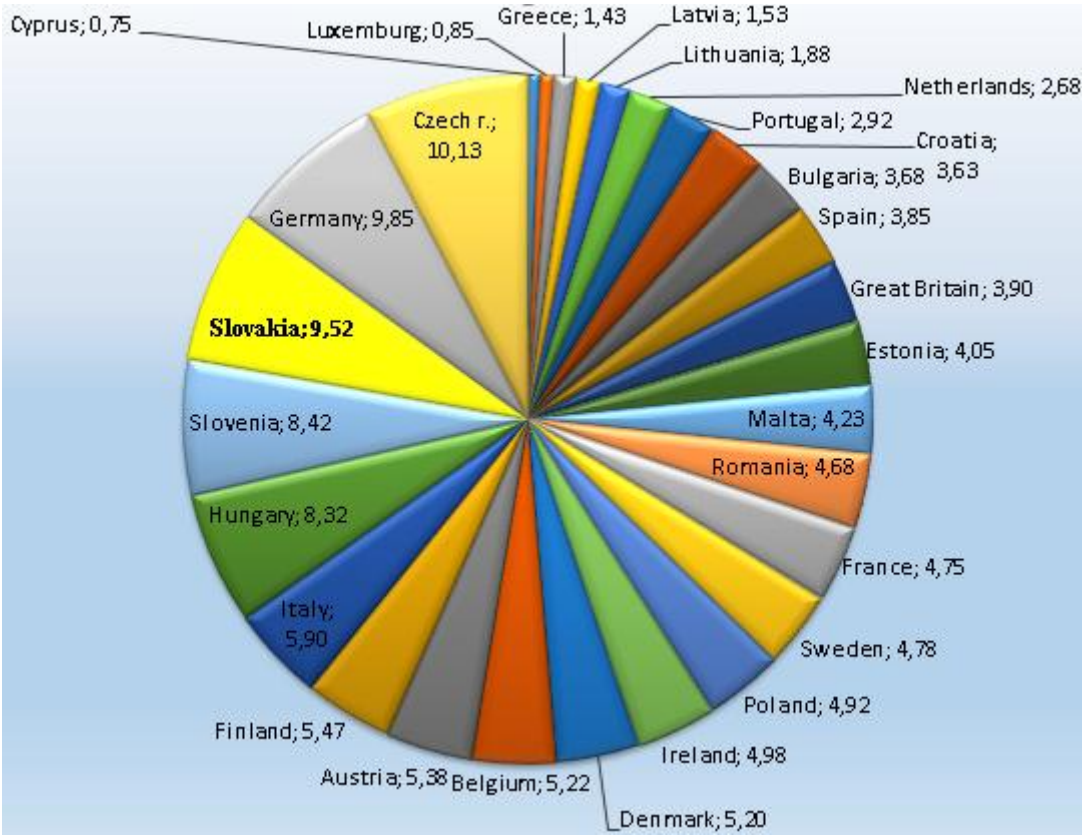
Country	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**Average**
Cyprus	0.8	0.7	0.6	0.7	0.7	1	0.75
Luxemburg	0.9	0.9	0.9	0.7	0.9	0.8	0.85
Greece	1.7	1.5	1.5	1.4	1.3	1.2	1.43
Latvia	1.9	1.4	1.3	1.3	1.5	1.8	1.53
Lithuania	2.1	2.1	1.8	1.7	1.8	1.8	1.88
Netherlands	3	2.7	2.5	2.5	2.7	2.7	2.68
Portugal	3	3	2.9	2.9	2.8	2.9	2.92
Croatia	4	3.4	3.3	3.7	3.9	3.5	3.63
Bulgaria	4.4	3.8	3.2	3.3	3.6	3.8	3.68
Spain	4.1	3.7	3.9	3.8	3.9	3.7	3.85
Great Britain	4.5	3.8	3.9	3.7	3.8	3.7	3.9
Estonia	4	4.1	3.5	4.4	4.2	4.1	4.05
Malta	4.8	4.3	4.3	4.1	3.8	4.1	4.23
Romania	5	4.6	4.4	4.7	4.6	4.8	4.68
France	5..2	4.9	4.8	4.7	4.6	4.3	4.75
Sweden	5.5	5	4.7	4.6	4.5	4.4	4.78
Poland	5.4	4.8	4.6	4.8	4.9	5	4.92
Ireland	4.7	4.9	5	5.1	5	5.2	4.98
Denmark	5.5	5	5.2	5.4	5.1	5	5.2
Belgium	5.9	5.2	5.3	5.2	5	4.7	5.22
Austria	5	5	5.2	5.5	5.8	5.8	5.38
Finland	6	5.5	5.7	5.2	5.2	5.2	5.47
Italy	6	6	5.8	5.8	5.9	5.9	5.9
Hungary	8.6	7.9	8.1	8.5	8.3	8.5	8.32
Slovenia	9.1	8.5	8.6	8.2	7.8	8.3	8.42

Slovakia	10.2	8.6	8.6	9.7	10.2	9.8	9.52
Germany	10	10.2	9.9	9.7	9.7	9.6	9.85
Czech Republic	10.2	9.5	9.5	10.3	10.5	10.8	10.13

Source: Eurostat

The study of knowledge-intensive service activities (KISA) is a case study in innovation that forms part of the OECD´s continuing work on national innovation systems. The value of KISA in facilitating the growth of innovation capacity within recipient organizations by focusing not on service sector industries, but on the role of knowledge-intensive services as carriers and source of knowledge that influence the performance of individual organizations, value chains and clusters across industries. (OECD, 2006, p8.).

Figure 1: Employment in knowledge-intensive business services compared to total employment in the EU from 2008-2013 (%)



Source: Author

Conclusion

We state that KIBS (knowledge-intensive business services) are a growing service area that employs, in Europe, a large proportion of knowledge-based workers, who perform difficult tasks and custom services. Slovakia is among the countries with the largest share of employees in KIBS and this is created by growth in car manufacture as well as employment of subcontractors. This trend will be further developed due to the incoming automobiles, Range Rover and Jaguar, in Nitra in Slovakia, where knowledge transfer combines with collaboration with local universities. Not only work places, but also research centers will be involved in innovation, research, and development and this will lead to increased numbers of researchers. Today, most developed countries achieve success mainly through

investment in research and development. From this perspective, KIBS, involving services relating to a company's accounting, auditing, technical engineering, R & D, finance (particularly banking, insurance, securities trading), communication and information technologies, legal advisory, and protection of intellectual property) are services that are drivers of economic growth.

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