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Factors Facilitating Upgrading Process of Knowledge-Intensive Business Services' Clusters in Global Value Chains

Abstract: The aim of this article is to describe the factors that facilitate upgrading process of knowledge-intensive business services (KIBS) clusters in global value chains. The observed phenomenon which can be described as an increase in value added produced by KIBS leads to a similar increase at the clusters' level, and consequently to an increase in the position of these clusters in global value chains. This topic constitutes a new research area. The available definitions of clusters were reviewed. The nature and specificity of knowledge-intensive business services' clusters were presented. The concepts of upgrading and global value chains were defined and the idea of upgrading of KIBS' clusters in global value chains were presented. As a result of the literature analysis, endogenous and exogenous factors influencing the upgrading of clusters in global value chains were presented. The article is conceptual and based on scientific literature, the review of which was a research method used.

Key words: clusters, business knowledge-intensive services, KIBS, global value chains, GVC, upgrading

Introduction

The functioning of the modern economy is described, among others, by making reference to clusters which are geographical agglomerations of specialized enterprises operating in internal and external relationships (with organizations of the environment), functioning within one or several related sectors [Gancarczyk 2010, OECD 1999, Porter 2001, Główna 2016]. Clusters, apart from the classic Porter's approach, have also been described by many other similar definitions, proposed by such researchers as Giuliani, Pirotbelli and Rabelotti [2005], Rosenfeld [1997], van Dijk and Sverrisson [2003], Doeringer and Tekla [1995], den Hertog and Malta [1999], Matusiak [2005]. The conceptualization of

this term is also conceptualised through institutional entities such as the European Commission [2002], the World Bank [2009], UNIDO [1999]. However, it is the OECD definition [1999] that most closely refers to the theory of value chain and knowledge economy. The concept of cluster is understood in this case as a production network of closely related companies (including specialised suppliers), entities that create knowledge (universities, R&D units, engineering enterprises), bridge institutions (brokers, consultants) and customers connected with each other in the production chain which creates added value.

Due to changes in production systems, distribution channels and the ICT revolution, clusters are becoming increasingly integrated in global value chains, also internationally [Rabelotti 2004]. The importance of clusters' presence on global markets is even more important taking into consideration the fact that clusters are responsible for the development 39% of workplace and 55% of household wage income [European Commission 2016]. However, due to both endogenous processes of economic transformation and exogenous factors connected with cluster's evolution, the issue of raising the position in global value chains (upgrading) is becoming increasingly important among research topics. At the same time, a phenomenon that Kaplinsky, Morris and Readman [2002] described, i. e. upgrading in enterprises and clusters takes place not only in terms of processes and products, but is also connected with functional restructuring of enterprises in order to obtain higher added value in global value chains [Kaplinsky et al. 2002]. At the same time, the role of knowledge-intensive sectors is growing, including creative industry, in performing added value and creating a national income of economies [Mudambi 2008].

The aim of this article is to describe the factors influencing the position of clusters of knowledge-intensive business services (KIBS) in global value chains. The following research hypothesis was used:

H1. The increase in value performed by KIBS leads to a similar phenomenon at the clusters' level in which KIBS operate, and consequently to an increase in the position of these clusters in global value chains.

The first part presents the nature and specificity of business clusters of knowledge-intensive business services. The key features of KIBS were also presented as criteria that have to be met by enterprises belonging to the cluster.

The second part defines the concepts of upgrading, global value chains and presents the idea of raising the position of clusters in global value chains (updating).

The article is conceptual and based on the literature, the review of which was a research method used.

Clusters of knowledge-intensive business services

Knowledge-intensive business services (KIBS) are specialised commercial service activities that create added value by creating, gathering and disseminating expertise, supporting the development of a knowledge-based economy by creating and promoting innovation, as well as stimulating upgrading processes in global value chains [Bohatkiewicz et al. 2017]. At the same time, this definition also points to the key characteristics of KIBS, which distinguish it from other sectors of the economy. Researchers who focused on this topic [Muller, Doloreaux 2009, Miles 1995, Tovoinen 2006, den Hertog 2000, Bettencourt 2002, Bohatkiewicz, Gancarczyk, Dileo 2017] present features of KIBS as e.g. business activity based on specialist knowledge, high entry barriers due to difficult access to information and qualified employees, application of process, organisational and marketing innovations, commercial nature of connections among stakeholders such as buyers and other organizations that interact with KIBS, strong emphasis on economic results, practical application of solutions used and flexible specialisation. Creating, accumulating and sharing knowledge are features present especially in the so-called "knowledge clusters", often located within university areas such as Silicon Valley in the United States of America, Cambridge in England, Ottawa in Canada and Helsinki in Finland [Huggins 2008, Ferreira, Estevao 2009].

This type of activity includes, among others IT, accounting services, business consultancy, advertising and market research, engineering services [Bocquet, Brion, Mothe 2016].

Modern tendencies that shaped KIBS clusters include growing role of knowledge-based economy, technological competitiveness, deepening specialisation and the pursuit of performing high added value activities, which requires advanced knowledge, often acquired through cooperation. The development of information and transport infrastructure, which is conducive to resource mobility, is a factor for the advancement of specialisation, as well as for cooperation with specialised suppliers. KIBS has also become indispensable elements of innovation systems and clusters in knowledge-based economies [He, Wong 2005, Muller, Zenker 2001].

Upgrading of clusters in global value chains

The term "global value chains", used since the first decade of the 21st century [Rudny 2013], extended the existing concept of management according to M. Porter [Chilimoniuk-Przeździecka, Kuźnar 2016].

The term upgrading is used to describe the process of transition to higher levels in global value chains. Upgrading also means the company's innovative potential in terms of increasing the added value of its products or processes [Humphrey, Schmitz 2002a,

Kaplinsky, Readman 2001, Porter 1990, Giuliani, Pietrobelli, Rabellotti 2005]. Simultaneously, Giuliani et al. [2005] point out that companies from developing countries often compete with low wages and low margins on their products and services, rather than with productivity or profitability. They refer to this as “fast” or “slow path” to competitiveness. The main difference they make between these two approaches is the difference in the ability of companies to raise their position in global value chains.

The process management approach in companies supported the process of unbundling of business services, followed by offshoring of part of the processes, initiated in 1949 by Automating Data Processing (ADP). However, the last twenty years brought a change in the structure of business services that are a subject to offshoring. Initially, it consisted of simple, routine functions and standardised activities (in 2013, the global turnover value of such activities was estimated at USD 952 billion [HFS Research 2014], of which IT outsourcing amounted to USD 648 billion and BPO – USD 304 billion) [Chilimoniuk-Przeździecka, Kuźnar 2016]. Currently, processes with significant added value are also being separated and offshored [Lewin, Peeters 2006, Lewin, Massini, Peeters 2009].

Upgrading of a cluster is an upgrading of individual sub-elements of a cluster, i. e. of its member undertakings. The issue of this phenomenon should therefore be considered in terms of the movement of individual firms towards higher levels in global value chains.

Therefore, the upgrading of clusters may take place under the influence of such factors:

- Contact of companies belonging to a cluster with other enterprises that are at a higher level of development;
- Mergers and acquisitions managed by entities at higher levels in a value chain;
- Implementation of innovations to a market (e. g. technological innovations) by a cluster, which may lead to its upgrading;
- Change resulting from cluster’s development strategy;
- Creation or economic response to a demand for a new product in the production of which cluster has a competitive advantage, e. g. in the form of comparative advantage or strategy of being first on a market;
- The necessity of adjusting a cluster to changing environment in which it operates, e.g. to changing legal conditions or large international projects (e. g. Via Carpatia, New Silk Road, Logistics Centre, Baltic-Adriatic, Baltic-Black Sea);
- Innovations that are ground-breaking in the sector, forcing internal changes in a cluster;
- The influence of the form of coordination on the distribution of income and risks within the cluster, which indirectly influences the evolution and pace of changes within a cluster;
- Entries in the structures of international networks or cluster associations;
- Change of business model used by cluster members, e. g. conversion and integration into modular value chains;

- Cluster transformation into a lead firms in modular production process systems;
- Aim to reduce transaction costs as a result of process improvement;
- The emergence of a new sector in which cluster has a significant market share.

It is also worth noting that upgrading of a cluster may be a result of phenomena occurring within the cluster, aimed at avoiding the decline in the process of cluster evolution. Cluster as a result of upgrading is entering a new trajectory of growth.

The issue of global value chains is closely linked to what Humphrey and Schmitz (2002) describe as the new forms of coordination (such as modularisation), which may contribute to the position of clusters in global value chains. At the same time, the questions raised in the context of global value chains are rooted in the contribution of these forms of coordination to sustainable income and employment growth in developing countries [Dahlan, Samat, Othman 2015].

Summary

This paper was an introduction to the issue of raising the level of clusters of knowledge-intensive business services in global value chains. Further work should be carried out in the following topics:

- comprehensive presentation of cluster's upgrading process, especially KIBS clusters,
- impact of global value chains on regional development and country's competitiveness,
- analysis of factors that support the diffusion of upgrading processes from a cluster to regional and national level,
- analyses which new forms of coordination support by cluster's upgrading the most,
- presentation of the influence of modularization on cluster's upgrading,
- presentation of the guidelines concerning regional development policy aimed at facilitating upgrading processes through a system of instruments supporting cluster initiatives and organisation.

The aim of this article was to describe the factors influencing the position of clusters of knowledge-intensive business services (KIBS) in global value chains.

It should be noted that, according to the hypothesis proposed in this article, the increase in value added produced by KIBS does indeed lead to a similar phenomenon at the cluster level, and this in turn contributes to the growth of the position of these clusters in global value chains. The presented endogenous and exogenous factors can effectively support this process. It should be noted, however, that in order to verify the hypothesis more thoroughly, it is important to conduct statistical surveys on a representative sample of KIBS-type clusters.

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