The Power of Clustering and HRM as a Source of Competitive Advantage: Evidence from Clusters from Poland, Slovakia, the Czech Republic, India and Developed Countries

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Abstract

This article tries to reveal whether the cluster approach can really support human resource management to act as a driver for regional economic development so as to strengthen the firms' competitive advantages for doing business. The analysis mostly relies on research on cluster activities and human resource strategies that enable a firm to achieve a competitive advantage. The study is based on some evidence of clusters from Poland, Slovakia, the Czech Republic, India and Developed Countries. This study reveals that, firms see the joining of clusters as a way of sustaining their competitive advantage and to enhance the regional economic development. Through clustering, they can share their strategic information, increase their innovative capabilities and find new market places, which broaden the competencies associated with individual professions. Finally, based on interview discussions with cluster managers in different countries, the results of this research confirms that, cluster activities support the Human Resource Management (HRM) of the cluster's core firms to enable them to survive in this competitive world.

Key words: Clustering, competitive advantage, economic development, Human Resource Management (HRM), industrialization, internationalization

1. INTRODUCTION

The very beginning of industrialization and internationalization of trade have influenced the increase of global competition that put a growing number of countries and individual businesses under pressure and in a quest for survival beyond their internal resources. Therefore, the cluster phenomenon has increasingly been recognized as an important approach to survive and to compete successfully in the world market. Since then, the cluster concept has been attracting the attention of several policy makers, academics and researchers from developing and developed countries. The idea of clustering has evolved in a process, passing through a number of economic theories developed by several economists, such as Ven Thunen's Location Theory (1826), Marshal's Industrial District Theory (1920), Max Weber's Industrial Complex Theory (1950) and Michael Porter's Industrial Cluster Theory (1990) (Das, R & Das, A.K., 2011). The concept of Industrial Cluster (IC) is not a new idea. It acts as a tool for the development of rural, small, medium and household sectors, and for the growth of regions and communities. The US President Barack Obama, in front of the US Congress, emphasized the significance of a cluster strategy as a necessity to maintain dynamic interaction process between large and small companies, universities, and financial institutions. He also considered a cluster policy as a vital factor for future US national economic competitiveness (Lenchuk, E. B. & Vlaskin, G.

A., 2010). On the other hand, human resources with their convenience and competencies are also an important element of an organization assisting to meet the industrial needs and influencing the regional economic development. This article examines, whether a cluster approach and Human Resource (HR) strategy can act as a driving force for strengthening the regional economic development and competitive advantage of a firm.

1.1 Overview of a present business scenario

At the moment, enterprises, mainly SMEs are under tremendous pressure to overcome their barriers in order to maintain their business in this modern competitive world and to keep pace with the continuously increasing complexity of social, political, and economic entities. During this transition period, the concept of *clustering* and the importance of *Human Resources* were viewed as an eminent approach facilitating firms to achieve their organizational goal and to increase their performance. This article seeks to give an overview of research on economic clusters and clustering as a tool for improving human resources and regional development, followed on how the cluster concept focuses on the internal processes of regional development. Where, the cluster approach has been developed for different institutional and strategic environments focusing on the importance of linking firms, people and knowledge at a regional level, in addition to the national level, as one of the ways of making regions and nations more innovative and competitive.

2. RESEARCH OBJECTIVES

The main aim of this article is to identify the impact of the *HRM* and a *Cluster* on the Small and Medium Enterprises (SMEs) and the Micro, Small and Medium Enterprises (MSMEs). Alternatively, the key principle is to properly justify the aforementioned problem through several specific ideas and views on a cluster and the HRM and their importance pointed in this study. This article attempts to find the answer for the following queries: If a cluster approach can be a way to enhance the competitive advantage of a firm? What are the strategies and driving forces of a cluster that enable a firm to improve its performance? What is the role of the HRM in today's business world? How the HRM can facilitate a firm to gain its competitive advantage? Consequently, the answers of all these questions were elaborated in further sections of this article.

3. THEORETICAL FRAMEWORK

The theoretical framework shows, that in the era of globalization, human resources are viewed as a source of competitive advantage. The values of people management are based on the beliefs that an organization gains a competitive advantage by using its people effectively and efficiently (Price, A., 2007). Likewise, the HRM i.e. the management of an organization's employees, can be referred as a "soft" management skill, where the resources of people can facilitate achievement of the organizational goals (Armstrong, M., 2006). At the same time, Miller (1987) suggests that the HRM relates to *"those decisions and actions which concern the management of employees at all levels in the business and which are related to the implementation of strategies directed towards creating and sustaining competitive advantage"* (Sharma, S.K., 2009). In 1990s, the eminence of the

cluster concept was popularized mainly by Porter and Enright[1] , who intended to improve the firms' competitiveness and to exploit the existing resources, explicitly human resources. According to Porter (1990, 1998, 2000), an industrial cluster is a geographic cooperation group that includes suppliers, consumers, peripheral industries, governments, and supporting institutions e.g. universities. Alternatively, Porter identified two important characteristics of clusters such as: (1) *Clusters do not take the same forms across nations and* (2) *Clusters tend to develop at a regional level* (Vazquez, M.J. & Vaillancourt, F., 2008). Hence, the main aim of a cluster is to: (a) bring together similar companies located in geographical regions, (b) develop initiatives, (c) promote growth.

Policy makers and economists in many countries, both at the national and the regional level, believe that supporting and creating clusters is the major way to be competitive and to win in the globalization race. According to the Cluster Initiative Greenbook (2003), *"the cluster initiative is an organized effort focused on the increase of growth and competitiveness of a cluster in the region with the participation of cluster companies, government, and/or research community."*

As Andersen et al. (2006) and Sölvell et al. (2003) have found, clusters and cluster initiatives are supported by governmental and regional institutions in a number of countries, mainly in the following form:

- informational support and education by means of "Guides", seminars, and conferences,
- grants supporting mapping of potential clusters,
- grants supporting the implementation of selected projects.

Generally, clusters positively influence the real income levels in the regions. This has important implications for the regional development polices, which are related to the type of regional cluster policy connected with the: (1) Type of cluster(s), (2) Actual degree of cluster formation in the region, and (3) Information and knowledge about existing clusters and cluster policies held by relevant political authorities.

A recent trends in management shows the significance of a cluster phenomenon as an integral part of business administration, economics, economic geography, and urban and regional planning (Karlsson, C., 2007). Similarly, Porter (1985) says that competitive advantage becomes sustainable, when it resists "erosion" by competitive behaviour and when the resources and capabilities enhance market opportunities. Again, in 1998, Porter pointed out that in order to compete in any industry companies must perform a wide array of discrete activities. For instance, marketing or research and development that generate costs and create values are the basic units of competitive advantage. In this competitive age, clustering is a hot topic.

3.1 The role of a cluster in today's business

The industry cluster concept has evolved over more than four decades and became enormously successful in New Zealand, Europe, India and the United States, demonstrating a significant result in developing skills, knowledge among the existing members within the companies, establishing new markets and attracting investment and other business prospects to the region. It has been observed that existence of a cluster stimulates the overall regional growth by improving the HRM that leads to the achievement of a competitive advantage and to increase of the

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1 OECD (2007). Competitive Regional Clusters: National Policy Approaches. 350 p. ISBN 978-92 64-031821

performance level of an individual firm. Let's try to answer the question, how is it possible? Is it possible due to several fields of cooperation, particularly: (i) Networking, (ii) Human Resource Management, (iii) R&D and innovation processes, (iv) Marketing and Public Relations, (v) Investments, (vi) Lobbying, etc. (Pavelkova, D., Knapkova, A. & Jircikova, E., 2007).
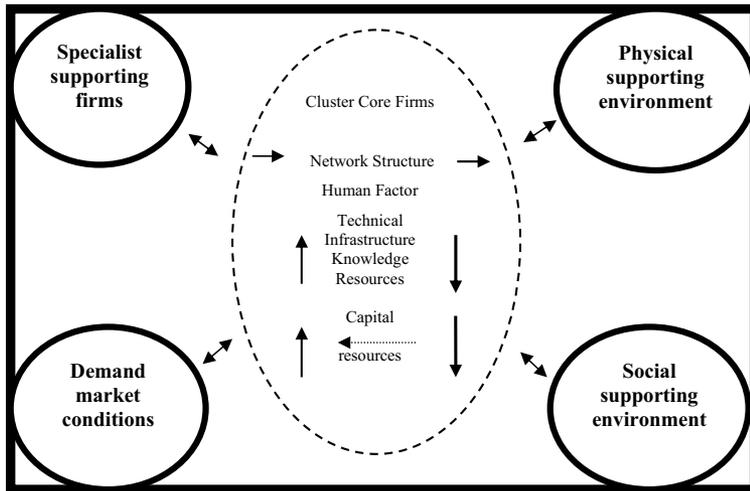

Fig. 1 – Integrated Model of a Cluster Map. Source: Martinez C. (1998), Saha, N. & Pavelkova, D. (2008)

The aforementioned Fig. 1 is an example of main driving forces of a cluster that facilitate a firm to develop their core competences. Basically, a cluster's core firms characterizes five main factors i.e. *the human factor, the technical infrastructure, the network structure, capital resources and knowledge resources*, which become more competent with the existence of certain supporting conditions such as: (a) specialist supporting firms, (b) physical supporting environment, (c) social supporting environment and (d) demand market conditions that have a great impact on innovation and competitiveness of firm's management. These five "balloons of competitiveness" are interrelated. Each of them measures the competitiveness of a firm. Each condition characterizes a close inter-relationship with others, which influences an efficient and effective development of a firm (Saha, N. & Pavelkova, D., 2008) Thus, clustering leads a firm to gain collective efficiency, which could hardly be achieved by an individual company alone (Dinesh, A., 2005; Porter, M.E., 2000).

3.2 The Human Resource Management as a source of competitive advantage
Nowadays, the business world has shifted its focus from physical assets to knowledge and information i.e. human capital. This is the most valuable asset as it guides the organization into a correct path, to be on time, to meet the right person, at a right place (Dransfield, R., 2000). According to various management experts, there are different HR strategies such as: (a) building and guiding coalition, (b) imaging the future, (c) understanding current capabilities and identifying the gap between business strategy and corporate strategy, (d) creating a map of the whole management system, (e) modelling the dynamic of the vision, (f) developing network

into action (Khandekar, A. & Sharma, A., 2005; Rennie, W. H., 2003). This article tries to emphasize that present competitive pressures have an influence on the increase of a strategic value of a skilled, motivated and adaptable workforce. Thus, HRM strategies enable a firm to identify and to adopt the human capital initiatives, which are probable for enhancing the competitiveness and shareholders' value. (Chew, I.K.H. & Horwitz, F.M., 2004). The below mentioned Fig. 2 depicts the way the source of market value has shifted from tangible assets to intangible assets during this period of globalization.
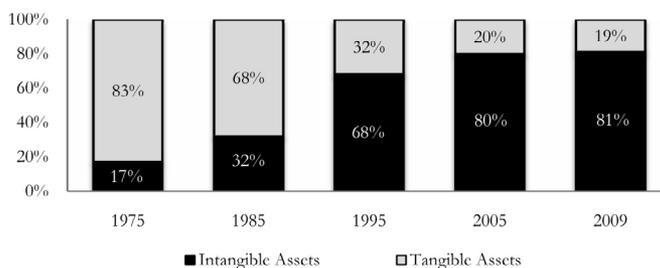
Fig. 2 - The source of market value shifted from tangible assets to intangible assets. Source: Ocean Tomo's (2010)

It is the reflection of HRM's importance in today's business world. It shows that even though in 1975 the market value of tangible assets was 83%, in 1985 its growth started to gradually decrease from 68% to 19% in 2009. Whereas, in 2009, the implied market value of intangible assets reached 81%, and remained on a high level throughout the years covered within this research (Ocean Tomo's, 2010).

Regarding this new challenge of the HRM, this article seeks to identify whether the HRM can really enhance the competitive advantage of a firm or not? In order to answer this question, we must take a glimpse of other researchers and management experts' views. According to Coff (1994), human assets are a key source of sustainable advantage due to their causal ambiguity and systematic information, which are making them inimitable. Fitz-Enz (2000) highlighted that 'people' are the lifeblood of any business enterprise, which cannot be compared with material things like: cash, buildings, or equipment. Briefly, it is to be noted that the HRM in modern enterprises has two inter-related roles: (1) *to foster the performance of an enterprise, and (2) to act as a support for achieving competitiveness through people* (Jassim, R. K., 2007). According to resource-advantage theory of Hunt and Morgan (1996), a firm strives for superior financial performance by enabling its resources to capture a position of a competitive advantage in a certain market or a market segment. This position is captured if two conditions are satisfied i.e.: (1) *if the firm can create more customer value than competitors do,* and (2) *if the firm has lower investment costs than competitors* (Poloski, V.N. & Vidovic, M., 2007). In a nutshell, it describes the strategies of the HRM that encourage high individual performance on how to lead enterprises and to meet competitive advantage (Burke, R. J. & Coope, C. L., 2008).

3.3 Challenges of industrial cluster escalating human resources

According to Baptista and Swann (1998) as well as Bergeron (1998), companies within industrial clusters or regions are more likely to innovate than other companies, as the chances of

boosting the technological knowledge are higher. Additionally, Porter (1998) states that industrial clusters facilitate organizations in making more conscious decisions regarding the selection of their location, fostering productive social relationships in those locations and working with other constituents nurturing the cluster. Researchers claim that the companies, which are within the cluster, are more progressive as they have better conditions for being competitive. While associating with clusters, enterprises can attain the following advantages (Pavelkova, D., 2006):

- Enterprises can enhance their productivity due to skilled manpower and adequate information.
- A cluster can reduce the limitations of SMEs, connect the enterprises from the diverse link of the value chain and enable them to compete against the large enterprises.
- A cluster can provide the enterprises an opportunity to reach the critical volumes in key areas by sharing space, personal expenses at fairs and other promotional actions.
- Thanks to cooperation within a cluster, enterprises can increase their accessibility, power and voice in order to make investment in the specialized infrastructure.
- New born enterprises can get the benefit of entering into a global market, what enables them studying of the marketing strategy.

Therefore, recently the organizations tend to join cluster to integrate and motivate the human resource that enables them to:

- develop more skills and specialized labour force,
- establish cluster skills centres,
- train people for employment,
- engage community-based employment intermediaries,
- establish new ones to fill gaps,
- support regional skills and alliances,
- enhance its potential,
- organizations can gain knowledge through attending training and development programmes, seminars, and conferences (ECOTECH, 2004)[2] .

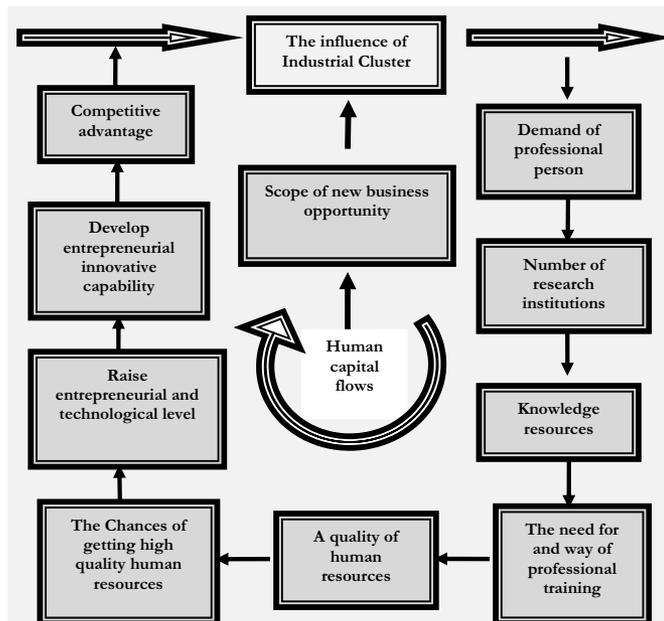2 http://hdrnet.org/296/1/file14008.pdf

Fig. 3 - The Thematic Model of Industrial Cluster boosting Human Capital. Source: Saha, N. & Pavelkova, D. (2010)

The aforementioned Fig. 3 depicts the influence of industrial cluster on human resources, which has a direct impact on the flows of human capital, such as: *demand of professional person, number of research institution, knowledge resources, the need for and way of professional training, quality of human resources, chances of getting high quality human resources, that raise entrepreneurial and technological level, development of entrepreneurial innovative capability, and competitive advantage.* All these factors can enhance the *scope of new business opportunity* that has an immense force in today's business. Fig. 3 explains that present situation in the enterprises raises the demand on the specialized professional employees in order to obtain a better performance facilitating growth and also another factor i.e. establishment of research institutions with aim to enhance the number of expert personnel to meet the global challenges. To overcome global challenges, companies need knowledgeable people. Within the cluster the chances of knowledge spill over are high. Hence, arises the need for professional training of employees in order to lead a firm and to increase its technological level. Technological progress within the cluster reduces costs and benefits to be competitive and to gain profitability (Saha, N. & Pavelkova, D., 2010).

3.4 Cluster, Human Resource Management and competitive advantage

Competitiveness refers to a firm's ability to maintain and gain market share in its industry, which is determined by the fact, whether the firm satisfies or not the needs of stakeholders. *According to Michael Porter, "the competitive advantage theory not only considers the factor endowments such as human resources, physical resources, knowledge resources, capital resources or the infrastructure inherited by organizations industries or regions, but also it emphasizes how these factors are creating and upgrading consistently".* Thus, the competitive advantage becomes sustainable, when it resists "erosion" of com-

petitive behaviour and when the resources and capabilities enhance their market opportunities (Mahapatra, S. & Shapira, P., 2003). This study focuses on the fact, that the probability of achieving the competitive advantage of a firm can be higher if a firm has adequate knowledge workers and is aware of the importance of knowledge and its utility. Generally, organizational knowledge consists of two broad categories: (1) knowledge that is explicitly codified knowledge and (2) knowledge that is not codified, but exists primarily within the minds of employees, tacit knowledge.

Therefore, the HRM not only influence the human behaviour in an enterprise, but it also affects the crucial development of human resources as a source of competitive advantage (Jayne, R.L., 2006). Stata (1984), Dertouzos et al. (1989) and Whipp and Pettigrew (1991) have argued that growing numbers of organizations realize the importance of human resources as a key to innovative and successful enterprise. According to them, the rate at which individuals and organizations are educated might become the only sustainable competitive advantage especially in knowledge intensive industries. As it has been observed, the knowledge-intensive industries are under the sunshade of sustainable industry cluster. Essentially, these clusters find new ways to accomplish their existing status, which develops HR policies and encourage continuous learning, teamwork, flexibility and knowledge sharing (Khandekar, A., & Sharma, A., 2005; Martin, S. & Mayer, H., 2008). In short, it can be said that under the umbrella of cluster, enterprises (SMEs) become more flexible to compete around the world, access better information, rapidly acquire the specialized resources and adopt the modern innovations.

4. RESEARCH METHODS

This study is mainly based on a combination of both deductive and inductive reasoning. Deductive argument depicts method of gaining the knowledge, whereas, the inductive argument shows some degree of support in the form of probabilistic reasoning.

4.1 Definition of a cluster used in this research

The definition of "a cluster" has been narrowed for the purpose of this research. The main goal of this research (project) is not an examination of natural (Porter's) clusters' functioning. Therefore, it focuses primarily on those clusters, which can be classified as having a "conscious development", i.e. clusters, which are consciously managed and organized (institutionalized).

The reason for the narrower definition is borne in the fact that it is possible to organize, manage, support and develop cluster, to facilitate mutual cooperation among competitors, and ultimately lead to the achievement of numerous effects and benefits both for the cluster members and for the region in which cluster operates.

4.2 Methods of data acquisition

The Faculty of Management and Economics at the Tomas Bata University in Zlín (Czech Republic) in cooperation with a number of other organizations in the Czech Republic and abroad was actively engaged in the project that had studied the subject of measuring and management of cluster performance. The financial support for the project was provided by the Grant Agency of the Czech Republic (Project No. 402/06/1526: "Clusters Performance Measurement and

Management"). The time span allotted for this project was from 2006 to 2008. During this project, an extensive research of clusters and cluster initiatives was carried out.

Currently, the research is being continued within the support of the project titled "The Development and Evaluation of the Performance of Cluster Policies, of Clusters and their Members with the Usage of the Principles of Benchmarking" supported by the Internal Grant Agency of Tomas Bata University in Zlín and the project "Clusters Performance Measurement and Management" supported by the International Visegrad Fund. Their basic goal is the expansion of scientific knowledge and creation of a knowledge database for the study of performance of clusters, cluster policies and cluster members.

Two methods of investigation were used within these projects; **questionnaire and structured interviews**. Questionnaires were directed to the cluster management (steering group) of 640 clusters around the world. The research was based on the results of 165 fulfilled questionnaires. In one-third of clusters, this investigation was supported by a structured interview with the manager of the cluster. The aim of the survey was to obtain information about tools, methods and good practices used for the successful cluster development. The questionnaire was divided into four thematic areas:

- Basic characteristics of a cluster,
- Cluster activities (services and joint actions),
- Cluster management and financing,
- Cluster performance.

The questionnaire survey was supplemented by structured interviews with managers of the selected clusters. The goal of the interviews was to gather detailed information regarding the process of cluster development, and also to receive the feedback from cluster managers, their views and experience.

Clusters' activities (which were the subject of research) have been identified by literature research and prior to research - communication with cluster managers and experts in clusters and cluster initiatives topic. On the basis of research conducted[3], cluster activities have been divided into the following areas:

- Networking;
- Human resources;
- Research and innovations;
- Business cooperation and promotion;
- Support activities;
- Governmental/political area (lobbying);
- Other activities.

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3 The Cluster Initiative Greenbook, 2003; Innovating Regions in Europe. IRE subgroup on Regional clustering and networking as innovation drivers: Cluster Management (Learning module 5); CLOE-Cluster Management Guide, 2006; PAVELKOVÁ et al. (2009).

4.3 Characteristics of the research sample

This study presents results of a survey of 165 clusters obtained via questionnaires and interviews with cluster managers. The group of respondents consists of clusters from around the world; in the research they represents a total of 23 countries: Australia, Austria, Belgium, Canada, Croatia, the Czech Republic, Denmark, Estonia, Finland, Germany, Great Britain, Hungary, Iceland, India, Italy, New Zealand, Norway, Philippines, Poland, the Slovak Republic. Slovenia, Spain, the USA. The vast majority of the respondents were from Europe (136; 82%).

The questionnaire survey involved 165 clusters, where 64 clusters responded in 2007, 91 clusters in 2010 and 10 clusters in 2011.

4. RESULTS AND DISCUSSION

The preliminary results from the authors' own survey, conducted with the usage of interviews of cluster managers in different countries, are presented in Tab. 1 and Tab. 2. The aforementioned tables present the comparison of cluster activities in different countries, i.e. Poland (PL, 51 clusters), Slovakia (SK, 9 clusters), the Czech Republic (CZ, 50 clusters), India (IND, 9 clusters) and Developed Countries (DC, 46 clusters). The answers of clusters are in % (a) and represent the activities that have already been implemented.

Tab. 1 - Comparison of PL, SK, CZ, IND and DC cluster activities – already implemented. Source: own.

Cluster Activities	Answers of clusters in % (a)				
	PL	SK	CZ	IND	DC
In the area of networking	69%	65%	80%	80%	85%
In the area of human resources	53%	44%	53%	75%	79%
In the area of research and innovations	51%	38%	64%	65%	74%
In the area of business cooperation	16%	17%	19%	18%	16%
In the area of promotion	49%	63%	54%	51%	59%
Support activities	39%	28%	34%	33%	54%
In the governmental/political area	41%	52%	43%	54%	60%
Other	18%	13%	11%	17%	29%

Note: (a) refers to % of clusters, which have already implemented these activities.

Tab. 1 gives the impression that all developing (PL, CZ and IND) as well as developed countries put much emphasis on human resource activities after the networking within all cluster activities. In PL and CZ clusters, activities under the HR constitute around 50%. Furthermore, it has been observed, that in IND and in DC clusters HR activities have been appraised as the highest priority at almost the same level (75% and 79% respectively).

Tab. 2 - Comparison of PL, SK, CZ, IND and DC cluster activities – already implemented or planned in the future. Source: own.

Cluster Activities	Answers of clusters in % (a+b)				
	PL	SK	CZ	IND	DC
In the area of networking	88%	91%	95%	91%	92%
In the area of human resources	85%	70%	85%	86%	86%
In the area of research and innovations	79%	50%	91%	82%	83%
In the area of business cooperation	45%	46%	44%	45%	27%
In the area of promotion	80%	84%	78%	80%	75%
Support activities	71%	44%	54%	46%	66%
In the governmental/political area	66%	60%	70%	62%	74%
Other	49%	33%	26%	34%	44%

Note: (a+b) refers to % of clusters, which either have already implemented these activities or are planning to implement them in the future.

On the other hand, Tab. 2 shows that the following developing countries (PL, CZ, IND) and DC appreciate the importance of human resources (all around 85%) subsequent to the networking activities. In CZ clusters, activities in the area of research and innovations appear as the second most important (more than 90%), thus indicating that boosting the research and innovation's competency is vital in cluster organizations. The major exception can be observed in SK clusters, where HR activities are on a comparatively lower level - 44 % in Tab. 1 and 70 % in Tab. 2. As clusters in Slovakia are very young, in their embryonic stage of development, therefore, HR activities are not their highest priority at the moment. However, a special attention is being paid to implementation of these activities in the future. A greater part of cluster managers agree that if a firm has a qualified workforce i.e. human resources, the chances of achieving the competitive advantage are higher.

It has been observed that other researchers also agree with the same opinion about the importance of human resources in enterprises. For example, in PL and in the CZ the activities offered by clusters under human resources are considered as an important factor for increasing the firm's innovativeness (Barsoumian, S., Severin, A. & Spek, T., 2011). A great example constitutes India's "ICT Cluster" often referred to as the Silicon Valley of India and the remarkable "IT cluster" in Bangalore, due to the presence of a large pool of human capital that lead them towards competitive advantage (Balachandirane, G, 2007).

Concurrently, Fig. 4 demonstrates the comparison of cluster activities in the area of human resources in PL, SK, CZ, IND and DC, which are either already being implemented or are planned to be implemented in the future.

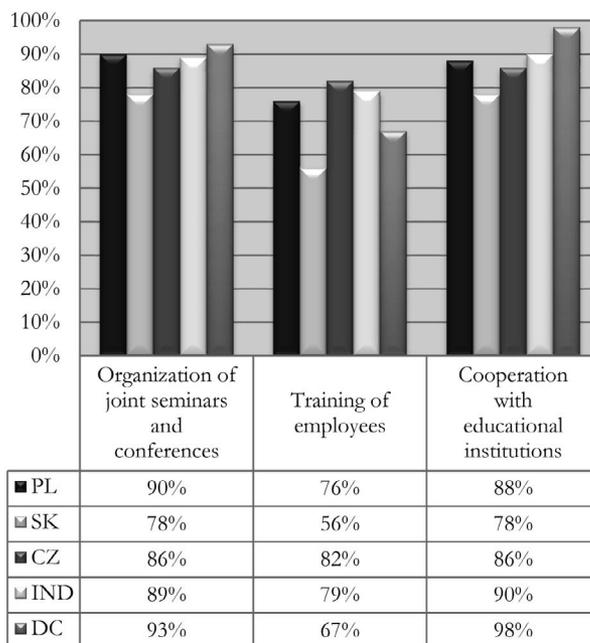**Cluster activities provided under Human Resouces**

	Organization of joint seminars and conferences	Training of employees	Cooperation with educational institutions
■ PL	90%	76%	88%
◪ SK	78%	56%	78%
◼ CZ	86%	82%	86%
◩ IND	89%	79%	90%
◪ DC	93%	67%	98%

Fig. 4 – The activities of cluster in the area of Human Resources in Poland, Slovakia, the Czech Republic, India and Developed Countries. Source: own.

Presented results confirm the importance of human resources activities in the specified countries. Most of the developing countries (PL, CZ, IND) and DC clusters consider joint seminars and cooperation with educational institutions (all around 80-90%) as vital activities for the development of human resources in enterprises, with the exception of SK (only 78% compare to others). Simultaneously, the value of employees' training indicates a lower interest of (PL, SK, CZ, IND and DC) clusters in contrast with the activities such as organization of conferences and cooperation with universities. From this study, we can perceive that a cluster usually provides the activities for the development of human resources in cooperation with educational institutions (due to direct or indirect support from the public or private sector), e.g. employees quality improvement programme, financed either by clusters' own resources (funds) or financially supported within different projects or organizations (e.g. UNDP, UNIDO, OECD). Activities in this area need to be developed as the HRD, through cluster management and cluster governance, can foster high levels of productivity and innovation. The conducted research confirms that countries put emphasis on the essence of innovation processes in the industry, directly or indirectly related with all cluster activities related to people. Therefore, in order to achieve better industrial outputs, clusters involved in the survey either have already implemented the specified activities in HR area or are under preparation to do so. Almost all

clusters providing these types of activities cooperate with educational institutions. As an example, the strong connection between a university and ICT cluster Z@ict in Slovakia can be distinguished (Soviar, J., 2009). The Czech National Cluster Association's (NCA's)[4] proposal of a training scheme (for cluster facilitators, cluster managers and stakeholders) constitutes another concrete example, where the importance of human resource development is consider as vital. Also, the Information Technology Cluster in India sets an example of the presence of a strong cluster in a region that may also attract talents from elsewhere.

6. CONCLUSION

On the basis of previous arguments, it is useful to point out the fact that nowadays, the phenomenon of a cluster constitutes a leading concept, which acts as an elixir for the regional economic development and for the competitive advantage of a firm. A well-tuned policy based on clusters always includes a framework for the development of human resources that illuminates the knowledge on individual, group and organizational levels during the action-oriented behavioural change. Such a change is facilitated by planned and systematic interventional activities that aim to give a free rein to human expertise for the purpose of improving work performance, which is one of the pre-requisites of the cluster concept sustainability.

However, at present, industry clusters, mainly in the developing countries are facing problems in terms of human intelligence, Knowledge, Skills, and Abilities (KSAs), human resource management and development. In addition, scholars mostly focus on the relationships between entrepreneurs and industry clusters, connection between professionals and industry clusters, etc. Nevertheless, in research, the practice of the HRM is not profound enough to clarify some key questions about the activities of HR that can support the sustainable development of cluster's core firms. The HRM and HRD strategy, as well as the appropriate training mechanism to foster the organizational development of human capital, are crucial for industry clusters and their sustainable growth. In this article, the empirical evidence shows that the key dimensions of the new economy are proper access to knowledge, skills and technology, where the HRM is considered to be a key player. The HRM is the backbone of any business, enabling a firm to enhance its core competencies through interaction and pooling of information between individuals within an organization or a cluster. It is assumed that the added value of this knowledge development process will lead a firm to achievement of its competitive advantage through the transfer of specific individual knowledge to the collective knowledge, and vice versa. The conducted research underlines the importance of a high level of implementation of activities in the area of human resources, where the education of human resources and cooperation with educational institutions appear as critical factors for the successful cluster development. This study highlights that the clustering can be considered as an important business tool for achieving the competitive advantage of an organization. Thus, by joining a cluster, a company's human resources can expand the level of their competencies, as the HRM:

- can promote and bind the relations by creating and stimulating the activities between individuals, departments, groups, and organizations,

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4 http://www.bvk.siteset.hu/fajl.php?id=11280

■   **99**

- can modify the technological interdependencies in order to enhance the diffusion of tacit knowledge within and outside the firm,
- can enhance employees' initiatives by rewarding them as well as by engaging them in knowledge sharing and knowledge development process.

Even though, some results have been drawn based on the investigation using interviews with cluster managers in different countries and the literature review, a tranquil debate still exists, whether globalization will influence the increase of the importance of clusters or not. Some economists argue that regional specialization and clustering of related activities are becoming more and more important aspects of the world economy as a result of globalization. Finally, this study proposes that companies should invest more efforts and resources in skill development and training of their work force in order to continue to grow in the current times of rapid industrialization and globalization processes. In regard to these far-reaching changes, the most important factors are enhancing the education, knowledge and skills of workers, and finding the most effective means of business and competitive worldwide strategies. A well-trained and adaptable work force constitutes as one of the key elements leading to productive and competitive economy in the new Millennium.

Dedication

The first author dedicated this article to her only beloved son "Kanishka Binayak Saha".

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