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HUMAN RESOURCES AS A FACTOR OF SUCCESS OF BUSINESS CLUSTER

Small and medium companies can significantly increase their competitiveness by interconnecting into business clusters, business incubators or technology parks. This interconnection contributes to the growth and development of not only cluster members, but has a regional and a national dimension. Without it, there can be no significant penetration into international markets. Due to all these factors, the issue of encouraging cluster connectivity must be given much greater attention in Serbia. In addition to a simulative economic policy, the process of development of clusters must be based on adequate human potentials where the key place belongs to the management of companies in a cluster and the management of the entire cluster.

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Introduction. Technical progress and adequate staff profiling are two essential conditions for the development of forces of production, in one company and one country alike. The comparative advantage of SMEs grouped into clusters is based on three aspects. These aspects are specialization, cooperation and

flexibility. Specialism of companies is the most important factor for the success of a cluster, because in this fashion small companies focus their resources (which are usually extremely limited) to what they do best. Specialized firms usually have no problems with quality control, as they deal in only one business activity, but it this activity they need to give their full contribution so as to meet the set standards.

Bearing all this in mind, the domain of management of a cluster, as a new form of business, requires special attention. From this starting point, this paper considers aspects related to human resources and management of companies linked in clusters. The key points considered are: staff qualifications and the training level of the workforce, productivity and innovation, collaboration with universities and research institutions, use of consulting services and adopted standards of quality. The importance of management in all these aspects is particularly emphasized. The paper also provides appropriate comparisons between the management of individual SMEs and the management of clustered SMEs .

After the introduction and the methodological concept given in the first, theoretical part of the paper, further discussed are the entrepreneurial and managerial practices in SMEs and clusters in Europe. Subsequently, we deal with human resource management in SMEs and improvements that association into clusters brings in Serbia. As part of the survey, we studied the real sector clusters that are part of the Serbian economy. Based on the analysis and the summary of the results of the survey, we report the implications that ensue from the results.

The aim of this paper is to gain insight into the actual status of the SMEs associated in clusters from the human resource point of view, and to point out the underestimated importance of clustering in Serbia. The concept of clustering does not only contribute to the strengthening of the competitive position of just its members, but also of the entire economy. Increase of exports and access to new markets, cheaper and more efficient use of inputs,

technology transfers, sharing of know-how are just some of the advantages that business clustering induces. Therefore, it is necessary to generate initiatives at all levels in order to promote performance increases of clusters.

Methodology. The survey for the purposes of this paper was performed in the period between April and September 2011. It covered 74 respondents from small and medium enterprises of Serbia's real sector, associated in the following nine clusters: Automobile cluster – Belgrade, VOJPLAST (plastics) – Subotica, Netwood (furniture) – Kragujevac, Asstex (textile) – Novi Pazar, Agency for wood – Belgrade, Galenit – Belgrade, MEMOS – Inđija, Agro cluster – Obrenovac.

The structure of respondents according to the number of employees in their enterprises is: up to 10 employees – 41.89 %, from 10 to 50 employees – 33.79 %, and more than 50 employees – 24.32 % of enterprises. The respondents had prevailingly managerial competences. They also represented a combination of managers and founders, or managers and owners, or co-owners.

The following hypotheses were set: 1. The structure of employees in the SMEs associated into clusters is favourable from the standpoint of training, qualifications, experience and tradition; 2. The management is an important factor of growth and development of SMEs associated into clusters; 3.Clustering leads to improved employee performance, increased productivity and faster adoption of quality standards as necessary elements for the increase of competitiveness of the cluster members.

Data collected by a questionnaire, which had a form of closed-ended questions, were analysed for the most part using the chi-squared test (χ^2). This method is applied in the processing of categorical variables, and is used to calculate the statistical significance of differences in the frequency of respondents by variable category in relation to the frequency that is expected based on the null hypothesis. The chi-square test can also be used for the processing of contingency

tables, i.e. when two or more variables are cross-referenced in a table.

Entrepreneurial and managerial practices in SMEs and clusters in Europe. The first and very important question that has different implications for the entrepreneurial and managerial practices relates to the diversity of human resources that are employed. It is an expression of increased complexity and dynamism, of both the environment and the enterprises themselves in the contemporary world economy. The cyclic movements in the world economy, which are characterized by a prevailing trend, tended, at one time, to create different multinational companies, which emerged through globalization. By contrast, in recent years, one could say decades, affirmation of SMEs takes place again.

In developed countries, small and medium enterprises make up to 99.8% of the total number of businesses: employing 60% to 80% of the total engaged labour force and making a significant contribution to achieving high gross domestic product (GDP). This is also shown by European trends, because already since the beginning of this century, small businesses employed 66% of the total number of employees in the European Union, in the following manner: Italy-79%, France-63%, Germany-60%, UK-61,5% of the total number of employees [3].

By contrast, in underdeveloped countries with significantly lower GDP, the sector of small and medium enterprises has been neglected and underdeveloped. Efforts to increase the competitiveness of individual enterprises in the undeveloped environment cannot make a significant impact. Hence the adoption of the Lisbon Treaty, which is all about the management of transition, based on the economy of knowledge, represents a challenge for the European Union.

A step further was the adoption of the Small Business Act (SBA) in June 2008. Ten principles of this document are based on the SME sector, entrepreneurship and entrepreneurs, who become the barrier to global processes of domination of transnational corporations.

In underdeveloped countries or regions, SMEs cannot cope with the dominance of large companies alone. SMEs may be torchbearers of development only if they are interconnected and if this connection does create a synergistic effect. One of the aspects of this interconnectivity is clustering of businesses.

Clusters are labelled as the most relevant macroeconomic factors that affect the development of regions, while economic growth in the EU regions is related to the level of strength of their clusters. Approximately 38% of employees in the EU work for the companies that are members of a cluster, which makes clusters an indispensable part of economic reality in the EU [4].

Introduction of new technologies and transfer of their implementation is also facilitated by clustering. Indirectly, the business clustering contributes to this process as well, because highly qualified and specialized workforce overcomes and accepts additional training more easily in this way. The members of a cluster continually build relationships of trust and cooperation. From the aspect of human resource management, particularly emphasized is activity that is manifested in teamwork. Teamwork is also an important feature for SMEs, even when they are looked upon individually.

Clustering in the function of improvement of human resources of SMEs in Serbia. Available human resources are an important asset of the Serbian economy. Nevertheless, the impact of the economic crisis in Serbia led to the situation that unemployment is not viewed as a temporary state, but as a long-term process. According to the Status Report of the European Commission on the SME sector and entrepreneurship (2011), this sector employed 65 000 workers in 2008 and 2009, which is about 7% and insufficient to achieve prosperity. Correspondingly, institutional support makes progress according to the aforesaid Report from the Commission. Adoption and implementation of best practices, procedures and rules is all the more important as employees in the SME sector account for almost half of total employed workforce (45.4%) in Serbia [9]. In this context, there are

different strategies for the support and the development of entrepreneurship and small and medium enterprises. The social and economic importance of SMEs is reflected in the fact that they represent a generator of economic development, the backbone of employment and help maintain the welfare of regional communities [5]. The reasons for the incentives are also found in the fact that entrepreneurship leads to increased self-employment. The main features that entrepreneurship has brought to companies in Serbia are private property and alignment with small and medium enterprises [12].

Coincidently, it is also characteristic that in Serbia in recent years there has been an imbalance of supply and demand in the managers' *market*. In the nexus of events are the joint efforts to recruit employees carefully and to, according to improvement programs, exchange them between companies, if such exchanges are prudent. Among other prerequisites for association of SMEs into clusters, there is also the interaction of human resource practices and increase of competitive advantage, which is the ultimate goal.

In the overcoming of all these shortcomings in the management of individual SMEs of great benefit are cluster interconnections. In addition, it is exactly at those places where networks and partnerships are poorly developed the idea of clustering (association) should be pushed in order to raise interest among the managers of small and medium enterprises in such an idea. In this context, there are different strategies for entrepreneurship development and support adopted by the Government of the Republic of Serbia. One of the latest examples of this support is the formation of the Council for Clusters by the Serbian Chamber of Commerce. The best way to ensure participation and support is to showcase to the managers of small and medium enterprises the direct benefits of clustering and the opportunities that they might miss if they do not join them [13].

However, the analysis of the current status of clusters in Serbia indicates

that the level of development of clusters in our country remains minute. A small number of enterprises in Serbia are involved in cluster operations – slightly less than 2% of domestic companies and only 3% of the workforce [15]. For the purposes of comparison, if 45.4% of the total employment is related to the SMEs [9], then we can unambiguously conclude that enterprises in Serbia insufficiently participate in cluster networking. According to the data from the Global CompetitivenessReport, by cluster development Serbia ranked 117th in 2009, which is a drop of its ranking compared to 2008 [14].

The educational structure of the population is of particular importance in research activities aimed at finding opportunities for the establishment and development of clusters. This is particularly important since in the educational structure of the population aged 15 and over (according to data from 2002), completed high school is the most common level of education with 41.1% of the population, the second most common being primary education – with 23.9% (mostly elderly people). In the total population, 6.6% are those with higher education, and 4.5% are those with two or three-year post-secondary degrees [10]. In 2009, a slight increase in all levels of education is noticeable, except the primary education, which endured a slight decrease in its share out of total.

Findings and implications. The survey has shown that the most common level of education in the analysed clusters is congruent with the dominant educational level in Serbia. Most employees have a high school diploma – 65.39%. The highest level of education is represented in 15.92% of the surveyed sample. The average percentage of workers with primary education is 18, 68% (Figure 1).

If we observe the management of companies involved in surveyed clusters, then we see a significant preponderance of highly educated staff, which is the most suitable for managerial positions. This level of qualifications is possessed by managers in the surveyed sample in the area of nearly 60%. With the addition of 18.92% for the post-secondary two-year education, the exact sum of these two categories is 77.02%. Secondary education is possessed by 20.28% of the sample.

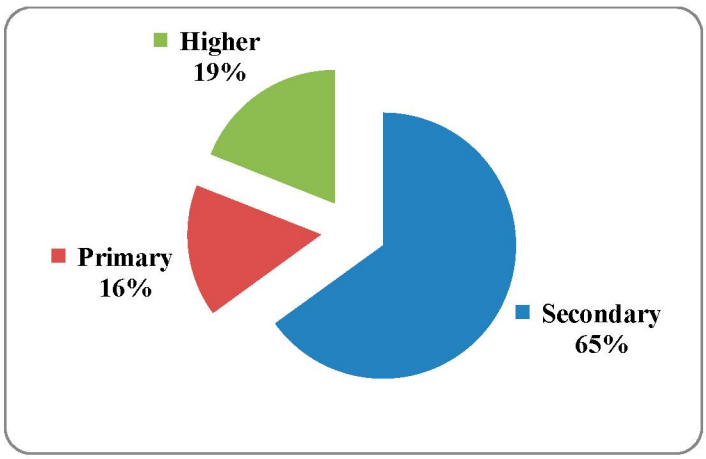

Figure 1 – Structure of qualifications of employees

Similarly, if we analyse the participation of enterprises in the cluster by level of education, the following indicators have been obtained: the majority of employees with primary education is in 6% of the enterprises; with a majority of employees with secondary education there is 50.7%, and with a majority of employees with higher education there is 7.5 % of enterprises. Equal number of employees from all three levels of education figures in 35.8% of companies (hi-k. = 38 851, df = 3, p <= 0.01). Presented survey results, as well as the fact that clusters operate in traditional sectors of the economy of Serbia (metalworking, automotive, wood, textile and plastics industries) fully confirm the first two hypotheses of this survey.

The views of respondents regarding the impact of clusters on the increase of the level of training and qualifications of employees are affirmative in 62.16% of cases. Within the clusters, scientific and research institutions can be found either as full members, or as support. One such example is the Faculty of Forestry in Belgrade, which is an equal member of the cluster *Agency for Wood* [*Agencija za drvo*]. This implies that in addition to information exchange within the cluster, there is transfer of knowledge, complementary skills and the overall experiential potential.

When it comes to consulting, over 80% of respondents uses it occasionally or continuously (hi-k.=21.808, df = 2, p <= 0.01). This data indicates that there is understanding of the importance of resources rationalization.

The next very important aspect is the impact of clusters on the productivity. The positive effect was evaluated to exist by 74.33% of the respondents (hi-k. = 12.162, df = 1, p <= 0.01). When it comes to innovations, then this percentage is somewhat lower. Positive responses were found in 63.52% of the sample, and neutral in 36.48%. The statistical significance of this indicator is: hi-k. = 5.405, df = 1, p <= 0.05.

In terms of the adopted standards of quality, only half of the respondents stated that their companies have adopted quality standards (52.70%). On the other hand, a slightly higher percentage (70.28%) plans to introduce quality systems in the subsequent three years (hi-k. = 13.928, df = 1, p <= 0.01).

Also, among the necessary elements for the development of competitive capacity of enterprises, the respondents ranked at the top positions the following: the use of modern technological solutions and equipment, standardization of the quality of operations and continuous improvement of knowledge and skills of both the management and the employees.

Given the fact that the respondents have emphasized the use of modern technology solutions, quality of business operations and continuous improvement of knowledge – of both the leadership and the employees, we can conclude that they have comprehended the importance of orientation to know-how. A cluster that connects such SMEs makes them organizations of learning, further stressing knowledge, which is an all-out modern trend. The results of our study stated above fully confirm our third working hypothesis.

Conclusion. The cluster policy has to be one of the priority developmental policies of Serbia considering that the experience of developed countries has shown that business clusters are carriers of the prosperity of national economies through increased productivity, stimulation of hi-tech innovations, improvement of systems of quality and raising of the competitiveness level of its members. Consequently, the SME sector should have to be regarded as the solution to the long-term economic growth, and not as part of the problem.

Escalation in competitiveness brings a surge in profitability, the volume of investment and employment. The tax policy can also stimulate employment. Clusters also represent an adequate response to globalization and become an effective lever of balanced regional development of a country.

In Serbia, apart from the material conditions, there are adequate human resources for the successful implementation of the policy of business clustering. The highly trained and qualified workforce and management structure, along with adequate macroeconomic policy development, are the prerequisites on which the economy can achieve a significant competitive advantage in international markets. Management is nowadays compelled to follow a new business formula that bases competitive success on the enhanced performance of more tasks with fewer resources. Emphasis is given to the strategies of competence, openness, association and cooperation with others, which is exactly what business clustering offers.

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