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Article

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CLUSTERS AS A PART OF IMPROVEMENT FUNCTION OF SERBIAN ECONOMY REAL SECTOR COMPETITIVENESS

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Abstract

One of the reasons for the lack of small and medium enterprises' competitiveness and for large regional disproportions in Serbia is the underdeveloped system of business connectivity that includes clusters, business incubators and technology parks. Setting competitiveness in the centre of the development strategy requires of all businesses subjects new approach development which will allow a better use of existing resources and result in increased export performances. Supporting association into clusters and using their benefits according to the model of highly developed countries is the basis of successful management of economic policy, and all the necessary prerequisites exist in Serbia.

Keywords: clusters, competitiveness, real sector, small and medium enterprises

JEL Classification: L 22, L 14

Introduction

In today's economic environment, clusters represent a significant form of networking of small and medium enterprises and entrepreneurship development. Clusters contribute to the economic development of regions and are particularly important for increasing export and the internationalisation of the region (Pešić and Panić, 2012). The effects of association into clusters add to the introduction of new technologies and innovations (Bednarova, 2008), implementation and improvement of quality standards and processes within the cluster, linking the various sectors and creating of strategic alliances (Hill and Jones, 2001), access to new markets, increase of export and the effects of economies of scale. Thus, associated small and medium enterprises become more important partner in dealing with large companies (Urošević and Djordjević, 2010), as a part of their production chain, but also with research institutes and universities, financial institutions and economic policy designers (Ilić, 2006).

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The policy of clusters has become one of the priority development policies of the European Union, with an accepted view that clusters are oriented towards prosperity in terms of productivity, technology transfers, higher competitiveness and overall economic growth (Tijanić, 2009). 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 (Commission of the European Communities – CEC, 2008).

Companies associated in clusters generate synergic effects resulting from the improvement of interaction relationships and exchange of information, knowledge and personal experiences (Pavelkova and Jirčkova, 2008). Through the building of network structures (Milanović, Trajković and Gocić, 2012), as well as horizontal and vertical integration, cluster members reduce their own shortcomings and manage in achieving the necessary level of competition.

In developing and transition economies, the economic policy is mostly centralised and the support to the development of competitiveness, including the cluster association, is weak. On the one hand, the companies are weak and lack the confidence and skills of cooperation; on the other hand, the governments often lack the capacity to do their share of the job. It is usually the case that the support of donors is needed in order to run the policy of cluster support (Ketels, Lindquist and Sölvell, 2006).

Because of known events from the early 90's concerning the breaking of Yugoslavia, its member states have started the transition much more slowly than other neighbouring states. This is why their place on the global competitiveness scale is so low in 2012 (out of 144 ranked countries). For example, Macedonia is 80th, Croatia 81st, Bosnia and Herzegovina 88th, and Serbia is 95th on that scale (Global Competitiveness Report, 2012).

Economic policy in Serbia after 2000's didn't acknowledge enough the need for developing the real sector of the economy. Serbia is characterised by an uneven regional growth. According to the data of the national company registry agency (2012) over 50% of all businesses operate either in Belgrade or in South-Bački region. Sector placement is also irregular. Two thirds of businesses operate in 3 sectors: trade 37.4%, refining 19.0%, scientific, expert, innovation and technical areas 10.9%.

In that macroeconomic environment the results of import/export activities are also unfavourable, and in the whole period of transition import is much larger than export. According to the National Bank of Serbia (2012) the trade deficit amounted to: -9,049.2 billion EUR (2008); -5,534.4 billion EUR (2009); -5228.6 billion EUR (2010) and -5,808.6 billion EUR (2011).

Negative tendencies of exchange can only be modified by raising the level of competitiveness of market subjects, which will reflect on the ability to compete in the international market, and thereby raise the exports. Clusters are known to be an efficient instrument of equal regional development, and because of that Serbia needs to put in a lot more effort in joining and encouraging of cooperation between SME's.

This study will analyse the position of small and medium enterprises and entrepreneurs in Serbia and the achieved level of cluster association in the real sector of the economy. The study should show whether the association leads to improved business performances, which is reflected primarily in the increase in competitiveness. The results of the study are important for SMEs and their managers, as well as the policy makers and the experts.

The aim of the study is to point to the need of improving policies, programs and initiatives in order to increase the opportunities for cluster formation in Serbian economy. The importance and role of clusters in the new export-oriented model of economic development is also being emphasised. The suggestions are made about the future activities of public authorities, associations and individual companies in that direction, taking into account experiences and examples of good practices of developed countries.

The paper is organised as follows: after this introduction, the next part presents the role of the sector of SMEs in the new model of economic development. In the second part, it presents the literature review relevant to the association of clusters as a contribution to increasing competitiveness of SMEs. Part three explains the methodology applied. Part four provides results and discussion of the research findings. The paper ends with concluding remarks and recommendations.

1. The role of the sector SMEs in the new model of the economic development

Economic policy during the transition period did not solve two basic macroeconomic imbalances:

- Higher growth of public and private consumption in relation to the GDP and
- Undue reliance on the growth of sectors in the creation of *untradeable* goods in creation of GDP, which increased the foreign trade deficit and deficit of payment balance of the state.

A new model of growth for the period 2011-2020 projects an average GDP growth of 5.8% per year and industrial production according to the rate of 6.9% per year (FREN, 2010). This justifiably triggers the question of how to achieve such results, especially if you have in mind the state of the real sector of Serbia's economy and the economic crisis in which we find ourselves. One of the possibilities is to achieve the global competitiveness. Undoubtedly, the construction industry, as part of the real sector, can be considered as one of the priorities. This activity contributed to the GDP and had a role in the economic growth of the country (Petrović-Lazarević and Vukotić, 2009).

The change in the ownership structure during the transition period did not lead to solving problems of structural incompatibility of the Serbian economy, so in 2008, the competition has decreased from the 84th to (the lowest for Serbia) the 96th place (out of 144 ranked countries) in the world. The Serbian economy is not sufficiently adapted to the high demands of competitive foreign markets, so that export is concentrated in developed regions, while the participation of some underdeveloped regions in total export and import, is symbolic. Foreign investors are also concentrated in the areas of major cities and developed regions, which further deepens the already large regional differences in the development. Thus, the factors determining their innovativeness depend on the characteristics of the region where they operate (Radas and Božić, 2009).

The lack of the local rivalry in the economy of Serbia, adversely affects the improving of productivity and strengthening of the development and innovative potentials and strategies of local companies (Djerić, 2009). The competitive behaviour of the majority of economic actors determines the most favourable ratio of cost / price towards the customers, rather than superior quality, innovation and differentiation (Džunić, 2010).

The entrepreneurial climate in Serbia has deteriorated, as shown by the study of the Global Entrepreneurship Monitor (GEM, 2010), whereby the total entrepreneurial activity index of Serbia in 2009, amounted to 4.9 and shows that in every 100 adults less than 5 entrepreneurship are active, while this ratio was 7.6 in 2008. Also, the qualitative indicators of the level of development of small and medium enterprises (SMEs) and entrepreneurs (Table no. 1) - employment per enterprise, turnover, profits and GVA per employee – are significantly lower than the EU average and most countries in the region.

Table no. 1: Performance indicators of the SME sector in selected countries of the EU and Serbia in 2009

	EU	Czech Republic	Romania	Slovenia	Serbia	
					2008	2009
No. of companies in 000	20.727	899	440	102	303,4	314,8
No. of employees in 000	90.006	2.505	2.633	424	940,2	872,5
Turnover in billion. €	14.284	245	268	51	58,3	46,6
GVA, in billion. €	3.626	49	37	11	10,5	8,7
Profit in billion	977	9	19	1	4,0	3,2
No. of SMEs on 1.000 inhabitants	41,6	86,6	20,4	50,7	41,4	43,0
No. of employees per company	4,3	2,8	6,0	4,2	3,1	3,1
Turnover per employee 000 €	158,7	97,8	101,8	120,3	62,0	53,4
GVA per employee in 000 €	40,3	19,6	14,1	25,9	11,1	10,0
Profit per employee in 000 €	10,9	3,6	7,2	2,4	4,2	3,6
Rate of profit	27,0	19	52,0	9,0	38,1	36,2

Percentage of SMEs in non-financial sector

No. of companies	99,8	99,8	99,6	99,7	99,8	99,8
No. of employees	67,4	67,6	63,6	67,0	67,2	66,7
Turnover	57,7	58,8	58,7	63,2	66,6	67,8
GVA	57,7	54,8	42,2	59,8	59,1	57,4
Profit	49,4	31,5	34,8	29,1	58,7	54,1

Source: EUROSTAT, DG Enterprise and Industry, 2010, Data for Serbia ODRS, SORS, 2010.

Although it has become a significant segment of the economy Serbia, the SME sector has not grown into the driver of the national economy development. To achieve the goal it is necessary to eliminate numerous limitations of this sector of which are most important the following: not rounded up institutional environment and framework (Brkić, 2010); the lack of knowledge and the ability of entrepreneurs and employees; insufficient promotion of research and development and management skills (Vidicki, et al., 2009); unfavourable financing conditions, improper forms and extent of financial support, programmatic access to finance are underdeveloped (Bošković and Kostadinović, 2011); insufficient linkage to large companies (Mičić, 2010); insufficient incentives for the introduction of modern technologies, innovations, standards, quality control, etc. (Mitrović, 2009); insufficient

incentive for internationalisation and insufficient information about markets (Pešić and Panić, 2012).

The practice of economically developed countries clearly shows that one of the most successful models of growth and development of small and medium enterprises is by linking them into the clusters on both horizontal and vertical basis. Examples of such clusters can be an inspiration to SMEs in Serbia to associate in such a way (Zarić, 2009).

2. Cluster associating as a contribution to increasing of the competitiveness of SMEs

A competitive advantage, as a complex indicator of the financial performance of a company, is a constantly current topic that concerns both theory and practice. A competitive advantage is conditioned by a number of external (macroeconomic policies, market infrastructure, institutional development and education system) and internal factors (resources and the ability of the company). Changes are fast, complex, unpredictable, so the management of a modern enterprise requires a change of thinking about how to operate and compete in the new economy (Schmitz, 1999).

The developed countries achieve prosperity thanks to the favourable conditions in which companies can improve their productivity, which has been by Porter (1991) pointed out when the clusters are in question. The process of popularizing the cluster concept is still current, because the clusters themselves are the result (Bianchi, 2005), because they eliminates many of the weaknesses that SMEs could not overcome without being associated, especially because more problems are caused by their isolation, not size. Economic clusters in each country are comprised of companies that are associated by vertical (buyer / supplier) or horizontal (common customers, technology, etc.) connections. The geographic concentration of competitors, customers and suppliers in the region will, within the cluster, promote innovation and competitiveness (Andreozzi, 2005).

Clusters are important because they produce tangible economic benefits for its members. Cluster benefits occur in two forms (Europe Innova Cluster Mapping Project, 2008):

- The growth of productivity:
 - Through the exchange of information and the use of shared resources;
 - By reducing costs through networking with other agencies for providing of specialised services;
 - The easier access to specialised suppliers and human resources.
- The growth of innovations:
 - By the rapid exchange of ideas and technological knowledge;
 - Due to the lower costs of development of new products and services;
 - The ability to build larger investment and development projects.

Clusters enable an easier interaction and cooperation between its members. The interaction and flow of information within and outside the cluster, can lead to technological exchanges that could lead to improvements in technology and business innovation. The empirical

evidence supports the argument that the companies in the clusters are more innovative than the firms that are not members of the cluster. Also, the empirical evidence suggests that there is a positive correlation between the strength of clusters and the power of the region in the innovation and development of patents (The Gallup Organisation, 2006).

Based on all the above considered for the purposes of our survey, was the first hypothesis was set:

H1: Association into clusters leads to increased competitiveness of member companies, due to an increase in labour productivity, the adoption of innovation, developing new technologies and adopting the latest standards of quality.

Bianchi (2009) points out that the experience of countries in transition has based the existing cluster approach on the critical mass of resources. On the other hand, the association of clusters should involve flexibility. Instead of stimulation of static competitiveness based on lowering of the costs (subsidies, tax breaks, etc.) clustering shifts the focus on improving of innovation; upgrade through new collectiveness, providing the basis for the new growth (Marić, 2008). The concept of clusters in addition to supporting the formation of new connections should stimulate growth, development and strengthening of the already formed cluster forms (Andersson, et al., 2004, 5).

Based on the experiences of the developed countries, clusters are formed in several steps and stages: the first step, the impact of certain industries to economic growth is measured; the leading industry branches (star branches) that have the greatest impact on economic growth and development are determined. In the second step, the leading industry branches of the future clusters on domestic and international markets are positioned. It goes on to record companies within the activities and the star company is determined; and in the fourth step, the selection of the strategy of network expansion is being made. Cluster development is a long-term socio-economic process and can take years, and as a result, a spatial concentration of firms and institutions, based on extensive business cooperation and rivalry, with the synergetic effect, is being made (Ilić, 2006).

Successful clusters are mostly a combination of three types of companies that complement each other (Industrial Development Report 2002-2003):

- companies of significant market and technological strength that act on an international basis,
- manufacturers-suppliers, mostly small and medium-sized enterprises,
- innovative and dynamic professional institutions (research institutes, universities, institutions for the professional training of employees in enterprises).

The concept of cluster activity enhances regional economic integrations and specialisation and improvement of human resource of the members (Pešić and Panić, 2012). Clusters are based on a voluntary cooperation where all the participants maintain their independence, while the cooperation is the key link between the existence and further development. The functioning of clusters and the pace of the development depends on the type of an enterprise and industry in which it operates. By means of cluster association, companies are becoming qualified to produce goods and services of higher processing level and better quality (Gligorijević and Kostadinović, 2012).

In accordance with the above stated arguments, the next hypothesis set in this study is:

H2: Clusters in Serbia are formed in sectors with a long tradition where there is domestic raw material base, the necessary experience in production and favourable qualification structure of the workforce.

The importance of the effect of clusters is reflected in their determination given by Zocchi (2009, 71): *Clusters are something more than mere interaction of firms; they are also social networks, which create economic ties between the players as individuals.* Companies associated in a cluster can have greater impact on economic policyholders and authorities and affect the strengthening of the influence of social and informal connections. They help performing of the major investment and development projects, access and funding from different funds and favourable lending, rather than individual companies (Mičić, 2010).

Initiatives for development of clusters can be defined as organised efforts to increase the competitiveness of clusters within a region, including private business, public and / or academic institutions (Sölvell, Lindquist and Ketels, 2003, 9). Ilić (2006) complements this list of logistic support with financial, educational and insurance institutions, and duty-free zones. Due to the cluster activities, a dialogue between the industry, academia and government is created, thereby strengthening the quality of the business environment of the members. The knowledge that comes from various partners in the cluster association is being incorporated in the organisation of the company, which contributes to the management of key processes. Purcarea T. and A. (2008) consider distribution important for cooperation and competitiveness. Methods of strategic response of the companies are being harmonised with the needs of the key stakeholders, therefore contributing to more efficient operation of all participants in the value chain.

Clusters appear as a kind of association that connects and integrates scientific and educational institutions, with the manufacturing sector. The linking of these two sectors of the economy leads to the need of establishing broad common interests in the area of procurement, sales, services, labour and other resources (Clusters of Serbia, 2008).

The cluster policy is the vital element of the construction of strong innovation systems as a prerequisite for growth and the creation of new vacancies. It may be a way for a country to build the competitiveness and mobilizes necessary medium-termed commitment of all relevant innovation holders. The cluster policy can be divided into three different categories (OECD, 2007):

- the first refers to "the policy of improvement of business conditions" aimed at creating a favourable microeconomic business environment for growth and innovations that directly stimulate the emergence and dynamics of clusters;
- the second category includes "a framework for clusters in traditional policies," such as the economy and politics of small and medium-sized enterprises, research and regional development policy, innovation policy;
- the third category is "the development policy" aimed at creating, mobilizing or strengthening of certain cluster categories, and they are the result of certain sectorial cluster initiatives.

Although the location is a significant competitive advantage, according to Dracker (2005), each company has to become globally competitive, even if it produces and sells only at the local or regional market, because the competition is no longer local. It, in fact, does not recognize borders any more. Therefore, every company, in the way that it's being managed, has to become a multi-national, and the links between industrial companies, suppliers, customers and other economic actors should permeate through the whole region and to spread across the national borders.

The third hypothesis of this study comes from the analysed literature:

H3: Prospects for the development of clusters in Serbia are good - good cooperation with scientific institutions, links with large companies, mutual confidence of cluster members, the planned expansion of activities and the introduction of quality systems, orientation towards export activities.

3. Methodology

The research for the needs of this study was conducted in the period from April to September 2011. The study included 74 participants from the same number of companies that have been associated into nine clusters in the real sector of the economy in Serbia. It covered the following clusters: Agency for wood – Belgrade, Agro cluster – Obrenovac, Asstex (textile) – Novi Pazar, Automobile cluster – Belgrade, Bipom – Belgrade, Galenit – Belgrade, MEMOS – Indjija, Netwood (furniture) – Kragujevac, Vojplast (plastics) – Subotica.

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.

Sample structure is as follows: Director (General Manager) - 45 respondents, followed by managers and owners united in one person - 13 respondents, only the owners - 10 respondents, and other categories of manager and co-owner - 1, only the co-owner - a founder - 1 and no data - 3. Among the largest number of respondents, the most notable were general managers, and the rest are financial and commercial directors.

The questionnaires were designed in such a way that they contained 28 questions, based on which we proved the hypotheses set.

Data collected through a questionnaire were analysed using chi-square test (χ^2). Chi-square test is a statistical method used in the processing of discontinuous variables to calculate the statistical significance of differences in the empirical frequency by categories of variables of expected frequency, based on the null hypothesis. Chi-square test can also be used for processing of two-dimensional tables of contingency. In addition to this test, for the contingency table analysis was used Pearson's contingency coefficient (C), the correlation coefficient of two categorical variables.

4. Results and discussion

In the transition period, regional companies that were champions of local development and employment disappeared; a consequence of this development is leaving of quality

personnel from underdeveloped areas to regional centres; therefore, it will be harder to implement future policy of development in local communities. The transition process has had an extremely negative impact on the regions – centres of traditional industries such as metal complex, the production of transport equipment, textiles, footwear, etc. who used to hire a great number of working-age population. The disappearance of large economic systems can be restored by the rapid development of the SME sector, association in clusters and linkage with large companies.

The study showed that clusters currently have approximately the same local, national and regional importance (Figure no. 1), indicating a still fairly large number of small businesses and entrepreneurs, whose business is directed towards satisfying the local market. When the importance of regional clusters reaches the state of priority compared to the other, then we can talk about the adequate role of clusters and all the positive effects that this type of association brings.

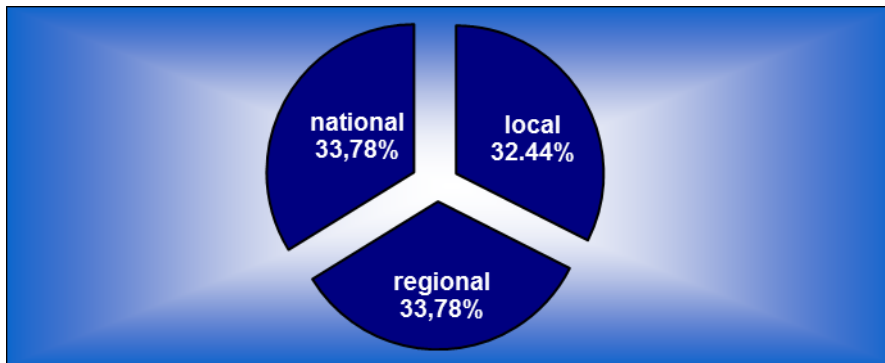


Figure no. 1: The importance of clusters

Source: Research of the authors

For the cluster development in Serbia, the necessary assumptions exist embodied in material and human resources, and companies - members of clusters and clusters themselves have a clear vision and strategy of its development. The initiative itself for the formation of clusters, according to research results (Figure no. 2) came mostly from the company (56.75%) and local authority and very little of the state ($\chi^2 = 46.914$, $N = 70$, $df = 3$, $p \leq 0.01$), which clearly indicates the need for significant state support to the processes of association, especially in times of economic crisis. Analysis of connectivity of the initiatives for the formation of clusters on the one hand, and their importance, on the other hand, showed a correlation of the significant of the clusters with the holders of the initiative for cluster establishment: $\chi^2 = 15.844$, $N = 70$, $df = 6$, $p \leq 0.05$, $C = 0.430$ $p \leq 0.05$, which indicates that there is (statistically) a moderate correlation between the significance of the clusters and the holders of the initiative for cluster establishment.

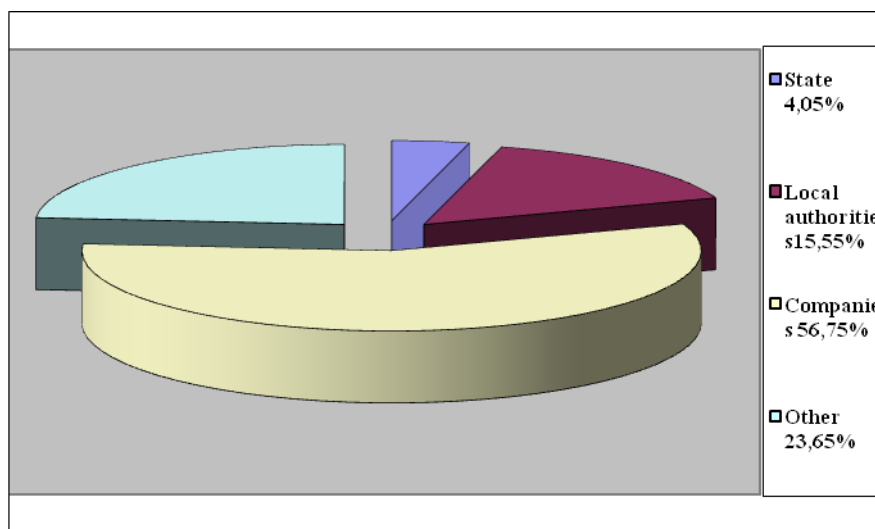


Figure no. 2: Initiative for forming of clusters

Source: Research of the authors

Positive impact of the clusters on increasing of the competitiveness of the cluster member companies was also confirmed by our research (Table no. 2). In case of the question of the impact of clusters related to the productivity, the positive impact was pointed out by 74.33% of the respondents ($\chi^2 = 12.162$, $N = 74$, $df = 1$, $p \leq 0.01$) indicating a mutual horizontal and vertical cooperation between cluster members, resulting in increasing of production and reducing of costs. Positive impact on innovation (63.52%) also exists ($\chi^2 = 5.405$, $N = 74$, $df = 1$, $p \leq 0.05$), which confirms that the clusters have become important carriers of innovation in our economy.

Thanks to membership in the cluster 58.10% of respondents have introduced new technology in production, and the introduction of quality systems in the next three years is planned by 72.98% of respondents, ($\chi^2 = 13.928$, $N = 69$, $df = 1$, $p \leq 0.01$ which means our first hypothesis is fully confirmed.

Table no. 2: Indicators of impact of clusters on the elements of the competitiveness cluster members (In %)

	Positive	Negative
The impact of clusters on productivity	74,33	25,67
The impact of clusters on innovatively	63,52	36,48
Impact of the cluster on the application of the new technology	58,10	41,90

Source: Research of the authors

Significant cluster resources of Serbia represent knowledge and industry experience of Serbian engineers and workers, acquired during the second half of the twentieth century in adopting and adapting of the new technologies to market demands. Clusters are formed in branches that are traditionally present in the Serbian economy: the metal sector, textile and footwear, automotive, furniture and plastic products. These activities are also according to the new model of economic development, designed to be carriers of exports and increase of competitiveness of small and medium enterprises. The good fact is that for these activities there is also an adequate raw material base, which means no high dependence on import. Qualification structure of employees (Figure no. 3) is satisfactory, with the participation of secondary education of 60.52%, and low cost of labour is one of the factors of competitive advantages of members. In addition, 62% of respondents positively assessed the impact of clusters on a further increase in labour skills (Table no. 3), which fully confirms the second hypothesis in this study.

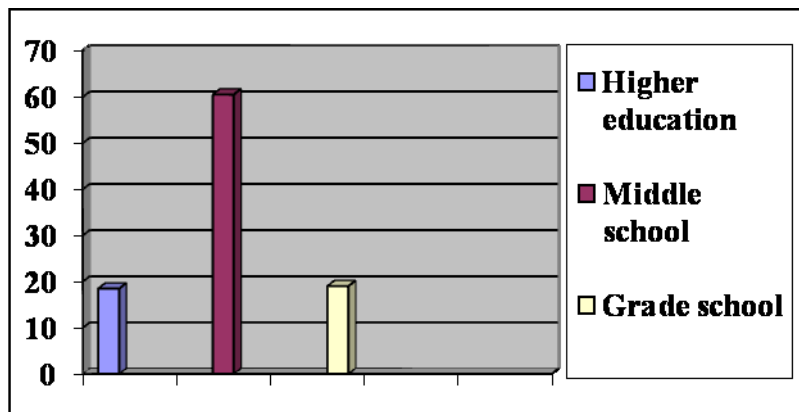


Figure no. 3: The qualification structure of employees

Source: Research of the authors

Clusters of the real sector are organised as a business network of manufacturers of selected assortment, equipment, parts and finished products which competitively services local customers in a particular region. This cooperation is organised (in our sample) mostly by the horizontal and vertical principle (59.46%), and only then by a horizontal (32.44%) method of organisation.

Mission of the cluster from the real sector is reorganizing equipment manufacturers, parts and finished products with maximum added value and their involvement into a business network with partners in the area and other countries of the region.

Research results (Table no. 3) show that the perspectives of development of clusters of companies from the real sector in Serbia are reasonable: a large percentage of respondents, due to the cluster association have links with

Universities, scientific institutes and organisations of research and development ($\chi^2 = 58.865$; $N = 74$, $df = 1$, $p \leq 0.01$), and there are established links with large companies ($\chi^2 = 13.838$, $N = 74$, $df = 1$, $p \leq 0.01$), which is a good basis for the development and performance in foreign markets in terms of tough competition.

Table no. 3: Indicators of connection with the environment and indicators of planning activities (In %)

	Yes	No
Cooperation with universities, scientific research centres	95,95	4,05
Connections with large companies	72,97	27,03
Increasing the skills of the workforce	62,16	37,84
The planned expansion of activities in the next three years	68,92	31,08
The planned introduction of quality systems	72,98	27,02

Source: Research of the authors

In the studied sample of 68.92% of respondents plan over the next three years the expansion of activities and investments in new equipment (56.44%), represented in Figure no. 4, which reflects the awareness of the companies of the importance of introducing new techniques and technologies, reducing production costs and increased competitiveness. A link between the planned development of the company over the next three years, on the one hand, with the introduction of a quality system, on the other hand, has been identified, the following results were obtained: $\chi^2 = 6.506$, $N = 69$, $df = 2$, $p \leq 0.05$, indicating relationship between the planned development - the expansion of the activities and implementation of the quality system in production. Introduction of quality system is planned by 73% of companies, and investment in new equipment 56.44% ($\chi^2 = 20.912$, $N = 58$, $df = 6$, $p \leq 0.01$), indicating that cluster members have significant growth plans in the future, which will result in orientation towards export activities. Also, the high degree of mutual cooperation and trust among the cluster members is one of the fundamental principles of a successful organisation and functioning of the clusters.

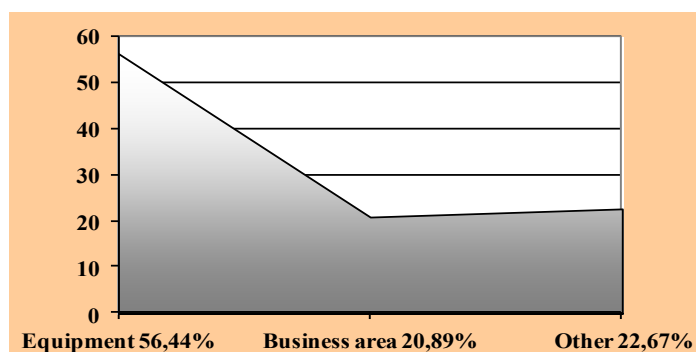


Figure no. 4. The structure of the planned investments in the following three years

Source: Research of the authors

The figures stated fully confirm the third hypothesis.

The strategic goal of clustering is that the Serbian industry becomes a technological bridge between western producers, primarily from countries that have the greatest business

cooperation and South-East Europe and other regions that are producers and buyers of equipment, parts and finished products.

The biggest obstacles in this process are shown in the survey in Table no. 4.

Table no. 4. The biggest obstacles in developing of the competitiveness of the companies within the clusters

	No. of responses
1) obsolete equipment and technology	38
2) lack of financial capital	59
3) lack of resources	16
4) insufficiently supportive business environment	36
5) lack of knowledge	5
6) inadequate use of methods and techniques of management	11
7) inadequate implementation of the marketing concept	10
8) variant international standards	6
9) administrative procedures and fiscal abstraction	36

Source: Research of the authors

The investigated sample, according to the opinion of the author of the study, gave a general picture of the real sector of the economy of Serbia, as well as the biggest obstacles to improve competitiveness. A lack of financial capital for many years is one of the main problems in business enterprises concerning the own limited resources of funding and adverse sources of debt (high interest rates and associated costs of loan approval, unfavourable maturity structure). On the other hand, lack of supportive business environment and large fiscal abstractions are the result of macro-economic policy in recent decades, which did not give priority to the productive sector, and thus the obsolescence of equipment and technology are factors that respondents highly ranked as an obstacle to raising the competitiveness of the real sector.

This process is, belatedly, taking place in Serbia. So far, according to the strategy of establishing and cluster development in AP Vojvodina (for the period 2007-2011) their profiling in a given respect was missing as well as encouraging further flexible specialization and business networking. All this had an impact on reducing the effectiveness of previous development projects. Funds intended for the development of the region have been set aside without the correct orientation towards the economic field or without specific idea or stimulation those activities that could be the carriers of the development. The objectives of the development of the region were too general. Nevertheless, one should bear in mind that this is all, according to Bardalen (2009), a long-term process.

A significant financial instrument of cluster support is through the annual programs of support to the development of innovative clusters, implemented by the National Agency for Regional Development. The program's aim is to strengthen the capacity of enterprises for the technological development and innovation through partnerships between companies and the establishment of strategic partnership with scientific-research organisations. The program includes the approval of grants that should also contribute to the increase of the

volume and value of the trading companies in the domestic and international markets, as well as the establishment of cooperation with clusters in the region and preparation for joint projects. The grants of the program in 2012 were used by 15 clusters (National Agency for Regional Development, 2012).

New clusters should emerge from the bottom-up clear processes, motivated by the effective goals of creating the added value and creating sustainable clusters, and not induced by short-term financial initiatives. The lack of the financial capital can be also solved by creating the conditions for attracting foreign investments and redirecting them to the key clusters. Apart from the national budget, additional sources of financing are also significant, such as donor support and funding from the EU program, mainly to strengthen the support in terms of knowledge and /or the construction of the network.

Table no. 5: Comparison of cluster financing in the selected countries of Europe

Country	No. Of inhabitants in mil.	GDP 2007 (in bill. EUR)	BDP per capita 2007 (u EUR)	Annual budget for cluster support (in 000 EUR)	Annual cluster budget/GDP (in %)	Annual cluster budget/ GDP per capita
Bulgaria	7,6	28.890	3.800	1.000	0.035	260
Cyprus	7,9	15.667	1.980	360	0.023	180
Estonia	1,3	15.270	11.750	960	0.063	80
Slovakia	5,4	34.857	6.460	10.000	0.287	1550
Slovenia	2,0	34.470	17.240	2.200	0.064	130
Serbia	7,4	29.124	3.940	500*	0.017	127

*Note: * Average yearly budget for direct, national cluster support in the period of 2007, 2008, 2009 (estimate)*

Sources: EUROSTAT, Statistical Office of the Republic of Serbia and The European Cluster Observatory, 2011.

Table 5 data show that the share of the budget in Serbia related to the direct support to clusters in the national GDP is the lowest in the countries that were used for comparison. This participation must be increased in order to make the cluster policy even more important and far reaching.

For the purpose of comparison, the cluster development policy in Spain and Poland can be described as primarily determined by the regional government initiatives. In Poland, the typical are the clusters in the high-tech sector, which have a strong regional element, with spontaneous bottom-up networking. (OECD, 2005). Accordingly, given the nature of academic centres and their activities, they should strive to support business activity insofar as business is part of the economic system that complements the state budget in financing science (Novacki and Staniewski, 2012, 769).

In the Czech Republic, according to research Bednarova (2008), it is necessary to develop an awareness of the cluster association, because SMEs know very little about them and the benefits of clusters. On the other hand, Pavelkova and Jirčková (2008) emphasize the proactive involvement of research and educational institutions in the Czech clusters.

Germany has become one of the leading European countries in biotechnology thanks to the financial support of biotech clusters. Finland has developed centres of professional programs, aimed at encouraging the resources at the local, regional and national levels (Tijanić, 2009).

According to Mesić (2009), the Croatian clusters are characterised by the lack of trust and "culture in cooperation", the lack of know-how in the management of clusters and the early phase of regional networking initiatives. Slovenia has implemented the concept of "dynamic concentric circles" that enables connecting small and medium-sized enterprises in clusters around the leading company. This kind of association is characterised by the flow of ideas and information with a focus on knowledge. The state allocates significant resources for clusters (OECD, 2005).

The Italian clusters have been developed mainly spontaneously, mostly in labour-intensive industries in the context of family enterprises, which are characterised by close personal relation (Borras and Tsagdis, 2008). Denmark was among the first countries to adopt the idea and the concept of clustering and is one of the ten countries included in the famous study by Michael Porter (1991). Thanks to LEDIB (Local Economic Development in the Balkans) program, funded by the Danish Government, focusing on the development of the SME sector, there has been an increase in the number of clusters and their importance in Serbia.

Recommendations and conclusions

The small and medium sized enterprises have a significant place and role in the economic development of Serbia. They are expected to greatly contribute to the creation of a competitive economy based on knowledge, innovation and new technologies, which is one of the preconditions for Serbia's EU accession. A special emphasis is given to the development of enterprises in the real sector of the economy, because the economic policy of the last twenty years completely neglected the real sector. Therefore, an important place is given to the reindustrialisation policy, as a model of economic growth in the future period.

Clusters are one of the instruments of growth and development of the SME sector, which has proven to be successful in a great number of developed countries. Cluster development policy in Serbia is relatively recent. The main objectives of this policy are to establish strategic partnerships and connections between enterprises in order to increase specialisation, quality of human resources and other factors of production; advancement of prerequisites for innovation and technological development by connecting companies with scientific-research institutions, and professional training of Serbian companies for business operations in foreign markets by increasing the volume and value of export.

Our survey has shown that the policy of cluster development in Serbia is underdeveloped. Institutional support to clusters is mainly confined to the promotion, marketing and access to the international markets, and in other areas, that cluster members perceived as very important (e.g., lack of financial capital, the simplification of administrative procedures and tax breaks), it is weak.

Awareness of the potential power and influence of the clusters is still very low, which results in a lack of commitment to improvement of the business environment suitable for their development. A significant number of clusters do not have the managerial skills needed to accomplish the management of the required level. Cluster management is mostly reactive, and is reduced to the resolution of administrative issues. It is also necessary to

stimulate and strengthen the links between research and industry sector, as well as a greater involvement of research and development institutions.

The selection and cluster formation from the study sample are the result of the work of a multidisciplinary team of experts. In the first phase, expert monitoring was conducted, and in the second, a detailed techno-economic and cost-benefit analysis, as well as the analysis of cluster impact on the region's development and overall economic development. Further steps in the development of clusters are undertaken by the managers themselves, on their own, or with the help of a multidisciplinary team of experts, relying on the educational and scientific-research organisations.

Necessary conditions for cluster development and for increased competitiveness of the clusters are: the geographically concentrated critical mass of related firms and institutions; clearly defined sector of activity; the support of local industry leaders (e.g.: FIAT automobile and cluster); strong links with suppliers and customers; access to research and educational institutions; supporting the labour market and infrastructure. For the observed clusters, these prerequisites have been fulfilled, having in mind that in a significant number of regions in Serbia cluster initiatives did not come to life at all, which points to the already stated need to develop the cluster policy in underdeveloped regions of the country.

Companies that are grouped into clusters are characterised by a high degree of mutual cooperation, which allows the companies to compensate for their weaknesses. The cooperation of the companies is very important, not only because of the useful resources, but also because of its flexibility, in terms of answers to special production requirements of business partners.

The survey has shown that clusters of Serbia have clearly defined business objectives that are commonly seen in:

- increased participation in the domestic market and export, increase of the value of production per worker, increase of the share of products with a higher level of processing, etc.;
- association of clusters of producers of equipment, parts and finished products in certain broader regions, cross-sector local and regional networking;
- strengthening and promoting of cooperation of clusters with the clusters of academies, universities, institutes and institutions of research and development;
- connecting with EU funds and programs of the community. Concretisation of the set objectives of the clusters of real sector enterprises is implemented through appropriate projects, which are made inside the clusters, as well as projects with producers from other countries, such as:
 - Long-term cooperation in the production of equipment, parts and finished products, serving and after-sales services with local partners and joint appearance on third markets,
 - Expanding cooperation on new products and new partners in other countries and to examine the possibilities to enter the neighbouring markets,
 - Development of products whose price will be acceptable, a prototype of new products and their joint testing,

- Developing of innovative product variants according to the specific requirements of regional markets,
- Preparation of the starting points for technology transfer and cooperation in the production of final products with local and regional partners.

The main method of work is the opening, conducting and execution of projects, as well as providing to the members of the cluster: activities ranging from organizing of fairs to visiting members and achieving compliance and assessment of work based on the started project tasks within the cluster.

Based on the research, it can be concluded that the cluster development in Serbia requires necessary assumptions embodied in material and human resources, while capital resources of the clusters of Serbia represent knowledge and industry experience of Serbian engineers and workers, acquired during the second half of the twentieth century in adopting of and adapting new technologies to market demands. Clusters of the real sector are organised as businesses network of manufacturers in industries with a long tradition, such as the production of automobile parts, agricultural mechanisation, furniture, construction, textile industry, agriculture and others.

The process of reorganisation of the manufacturers of equipment, parts and finished products with maximum added value and their involvement in a business network with partners in the region and other countries of a certain region should contribute to achieving the strategic goal of the clusters. That goal is that the Serbian industry becomes a technological bridge between western producers, primarily from the countries that have the greatest business cooperation and South-East Europe and other regions, which are producers and buyers of equipment, parts and finished products.

Based on the research conducted, authors provide the guidelines of the activities of all the participants in the process of clustering in Serbia, as their contribution to the more effective performance of these processes.

It is necessary to work towards a stronger connection between scientific- research, education and development institutions, on the one hand, and the companies, on the other hand. The results of scientific-research work still do not have a widely commercial application due to the lack of financial capital. The reform in the area of higher education can produce the staff with more practical knowledge, which with additional professional training programs, would be able to respond to the needs of the clusters.

Much more attention must be paid to cluster management, because in practice, it often all comes down to resolving operational issues. Cluster managers must promote and demonstrate the benefits of networking, to think strategically and have a vision, to realize the interactions with all interested parties. Successful clusters are based on strong relationship and network systems; therefore, it is necessary to build trust, shared values and goals.

It is necessary to classify the region according to the system NUTS (Nomenclature of Statistical Territorial Units), which would provide the obtaining of representative statistic data, and thus provide encouraging of the formation and development of clusters in those regions where human capital accumulation, production specialisation and integration exist, as well as strong relationships between companies and institutions. By forming the

statistical regions in accordance with the NUTS classification, access to the regional development support funds, programs and projects to support would be provided.

Cluster development policy must not be based on a single strategy applicable in all situations. The experience of developed countries shows that, „one size fits all" approach in the formulation and implementation of the policies and programs, is ineffective. In order to identify the specific needs, it is necessary to qualitatively and quantitatively map Serbian clusters in order to show where the individual clusters are positioned (quantitatively) and what the potential of their future development (qualitative) is. The mapping should be carried out on the basis of key parameters such as: the number and types of companies within the cluster, the number of employees and the level of professional training, business and trade relations, export activities and analysis of methods of cluster cooperation with universities, other clusters, and organisations, such as the Chamber of Commerce, regional institutions and others.

Taking into account the current degree of development and comparative advantages of Serbia, relying on the positive experiences of the developed countries, production and trade groups that would be suitable for the formation of successful clusters in the local economy should be defined. It is necessary to analyse in detail the effects of the entry of large foreign companies on the Serbian market and the impact on the possibilities of associating and vertical integration of SMEs and the development of local supply chains.

Serbia has many competitive advantages on which further growth and development should be based. In the context of clustering, the following are by all means relevant: a long-standing tradition and qualified work force in some industries; the regional concentration of manufacturers and proximity to relevant institutions; being positioned along the Corridor 10; the availability of natural resources for the production of certain product groups; the intense performance capabilities of domestic enterprises on the markets of the countries with which liberal customs regime has been established; as well as the proximity to the EU and lower transportation costs, as prerequisites of a quick and efficient response to the dynamic changes in the market.

In order to enhance the development of clusters in Serbia, it is necessary to complete the process of regionalisation and decentralisation, as well as to systematically approach the strengthening of the awareness of the cluster concept and importance of the cluster concept. Implementation of the regionalisation process would create an environment in which the cluster needs would be more effectively exercised, an effective public-private dialogue would be established, and a greater availability of financial resources for the support of the development of clusters would be ensured.

The success of the clusters is also largely determined by the degree of involvement of the state, that is, its formulation and implementation of policies, programs and initiatives for the development of clusters. By the means of identification of the strategically significant and export competitive sectors, the state would indicate the main areas of activity, to which the regional agencies, by the implementation of specific programs, would provide the necessary support. On that basis, the SME sector would more easily formulate and implements its medium-termed and strategic plans.

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