COMPETITIVENESS CLUSTERS – PARADIGM FOR ECONOMIC DEVELOPMENT OF THE REPUBLIC OF CROATIA

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ABSTRACT

The accession of Croatia to the EU has obliged the public sector to seriously reconsider its strategic approach to development priorities and how they are achieved, as the ad hoc solutions until now are more reactions to the changes in the economic environment, than they are the result of strategic planning of long-term goals. Although the economy of Croatia as a small country is inevitably dependent on exogenous processes, it is also evident that since the creation of the independent state, political elites have not reached a consensus on the development agenda and economic development goals they desire. In order to secure access to European Union cofinancing for economic-development activities, the Croatian Government was asked to present to the European Commission an economic development plan for a financial perspective on 2014 – 2020. They selected the Smart Specialization Strategy to advance the development of twelve sectors of the economy that are deemed the sectors with the highest competitiveness potential. Further development of these sectors is stimulated through creation of competitiveness clusters designed to enable a triple-helix cooperation model connecting the scientific and public sector, and the economic actors. Their cooperation creates a framework which enables the scientific sector to better understand the needs of the economy and to link its research agenda with these needs, foster faster transfer of innovation and new technologies into the real sector, and educate public policy makers to create an enabling environment to intensify this cooperation. Activities in the development of competitiveness clusters up until now have not been sufficient to ensure a full functioning of the triple-helix model. To prove this hypothesis, we conducted a study, the results of which show why the Croatian economy has still not managed to create competitiveness clusters. The ideas we gained through the study should serve as guidelines to decision makers at different levels for more effective implementation of the activities for the development of competitiveness clusters in the Republic of Croatia. The methods employed in the study comprise methods of analysis, synthesis, induction and deduction, as well as a descriptive and a compilation method.
Pristupanje Hrvatske Europskoj uniji javnom je sektoru nametnulo obavezu ozbiljnog strateškog promišljanja razvojnih prioriteta i načina njihovog ostvarivanja, koji se uveliku razlikuju od dosadašnjih ad hoc rješenja, a koja su većim dijelom bile rezultat reakcije na promjene u okruženju, a manje rezultat sustavnog planiranja dugoročnih ciljeva. Iako je gospodarstvo Republike Hrvatske, kao male zemlje, ovisno o egzogenim procesima, od trenutka stvaranja nove države evidentan je istostanak strateškog promišljanja i konsenzusa političkih elita o poželjnom smjeru i ciljevima gospodarskog razvoja zemlje. Kako bi se omogućio pristup sredstvima Europske unije za sufinanciranje aktivnosti usmjerenih na gospodarski razvoj, Vlada Republike Hrvatske je Europskoj komisiji morala prezentirati plan gospodarskog razvitka za financijsku perspektivu 2014 – 2020. godine. Odabrana je strategija pametne (osmišljene) specijalizacije uz unapređenje onih dvanasate sektora gospodarstva za koje se drži da predstavljaju sektore s najvećim potencijalom povećanja konkurentnosti gospodarstva. Njihov daljnji razvoj potiče se osnivanjem klastera konkurentnosti koji trebaju omogućiti ostvarivanje triple helix modela suradnje kojigraditvija povezivanja znanstvenog i javnog sektora, te gospodarstva. Nijovih je povezivanje okvir za bolje prepoznavanje potreba gospodarstva od strane znanstvenog sektora i povezivanje područja istraživanja s tim potrebama, brz transfer inovacija i novih tehnologija u gospodarstvo, kao i stvaranje uvjeta za intenziviranje te suradnje od strane kreatora javnih politika. Dosadašnje aktivnosti na razvoju klastera konkurentnosti nedostatne su za funkcioniranje triple helix modela. Za dokazivanje te hipoteze provedeno istraživanje čiji rezultati kazuju zašto hrvatski gospodarski sustav još ne uspijeva uspostaviti klaster konkurentnosti. Dobivene spoznaje donositeljima odluka na različitim razinama trebaju poslužiti kao smjernice efikasnije provedbe aktivnosti na razvoju klastera konkurentnosti u Republici Hrvatskoj. Korištene metode istraživanja obuhvaćaju metode analize, sinteze, indukcije, dedukcije, deskriptivnu i metodu kompilacije.

Ključne riječi: inovacije, klasteri konkurentnosti, razvoj, triple helix model, javne politike

1. Introduction

The Republic of Croatia became a full member of the European Union on 1 July 2013. During preparations for membership, in the pre-accession period, the greatest amount of attention and European financial assistance were focused on the public sector and its customization to the possibilities that EU membership provides to all segments of society. In the economy, from the moment when Croatia was granted candidate status, the focus was on the development of a competitive, dynamic, knowledge-based economy based on the Lisbon Strategy and its economic, social, and environmental pillars. Within this strategy framework for the achievement of economic aims, clusters, a method for promoting cooperation among the public, scientific and business sectors, were given a special place. This would provide an overall competitive position for the European economy on the global market. The Lisbon strategy has been revised in terms of concretizing the objectives and additionally channeled towards growth and employment. Also, due to the economic crisis, its undesired results and a lag in the European economy behind its competitors, especially those in the BRIC countries, this same orientation was confirmed in the new strategic document Europe 2020. The document places emphasis on achieving competitive advantages for the European Economic
Area in relation to market competitors with a focus on smart, sustainable and inclusive growth, which will ensure an employment rate of 75% for the working-age population aged 24-65. Clusters and business networks are again identified as key instruments for the implementation of the Europe 2020 strategy, because they are considered to be stimulants that accelerate industrial transformation and the development of new, regional competitive advantages which accomplish the goal of economic growth and job creation. This is supported by the major European initiatives **Innovation Union** and **An Integrated Industrial Policy for the Globalization Era** which have been formulated to meet the 2014-2020 program period. Within the cluster policy, the primary focus has been to help small and medium enterprises increase their innovation potential by joining with stakeholders from the academic sector, even though large companies in this interaction have their place, which is especially related to the capacity for articulation of scientific problems, and connection with the scientific community.

The Republic of Croatia has situated all its strategic goals within the frame of the goals for the development of the European economy, to which it now belongs. To pursue the goal of economic development with appropriate policy measures, twelve sectors of the national economy were selected which are thought to represent fields of competitive advantage in the Croatian economy. After the establishment of the twelve competitiveness clusters, due to the way they were initiated and the lack of funds to support their activities, there has been an absence of concrete activities that would go beyond the participation in the establishment of sectoral clusters and participation in selecting of offered options for the creation of a smart specialization strategy.

2. Clusters as a lever of competitiveness

2.1. Organizational form

The clusters represent organizational forms that connect business subjects of one economic sector whose motives are to merge for the benefit of efficiency in placing products and services. Clusters cooperate with the public and scientific sector; they connect at the regional or even national levels. A model of cooperation which involves these three sectors is called a triple-helix model. By merging into a cluster, members lay the groundwork for the implementation of joint projects, and they reduce individual costs for investments in research and development. With the creation of a common cluster infrastructure, and the selection of projects and investments which increase the level of knowledge and innovation in their segment of the economy, clusters are important drivers of economic development, especially for small and medium entrepreneurs. Also, the role of clusters is key for breaking into foreign markets for those members with limited individual strength so that they can be recognized as an economic segment outside the domestic market, and for export growth. Competitiveness clusters reduce innovation costs with their activities; they strengthen the process for the creation of value and creation of new market opportunities. It is almost an unwritten rule that a state at the initial stages of clusters development supports the creation and function of clusters, because clusters are an effective instrument for enhancing competitiveness. The EU

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77 European Commission, An Integrated Industrial Policy for the Globalisation Era, Putting Competitiveness and Sustainability at Centre Stage
78 The triple helix model implies collaboration among the scientific, business and the public sectors.
ambition is to support regional clusters whose coverage extends beyond the borders of national regions, because this creates synergic effects of national economies.

2.2. Clusters in the Age of Globalization

Globalization has challenged economic subjects with competition in which the imperative of quality and price competitiveness is being supplemented by the demand for originality, often resulting from regional or national distinguishing features, and thus creating a much-needed global recognition on a global market. Improving the competitiveness of intellectual capital with an emphasis on networking of managers and entrepreneurs, the stimulating of partnership among businesses, universities, institutes and local governments is certainly a winning combination in today's market conditions (Horvat, 2003, 228). One of the goals of clusters is the realization of a sustained competition, with the help of merging with similar companies in specific regions and centers of excellence and competence, in other words the research centers and the government institutions that support them. They have spurred the competitiveness of the Spanish province Basque, and France also profited from this approach. The Basque province, for example, since 1990, thanks to competitiveness clusters, has raised the per capita GDP from 90% to about 130% of the EU average. Investments in research and development have grown from 0.5% of GDP (today Croatia invests in R&D around 0.75% of the GDP) to as high as 2%, while companies from different competitiveness clusters represent 35% of Basque's GDP. On the other hand, France became one of the European Union leaders in innovation and technology, and last year's study79 shows that one third of members in the cluster increased their revenues and exports, while two-thirds increased the number of employees80. In areas where the use of the cluster model proved successful this was, clearly, due to a successful selection of strategic development objectives from the public sector. Its role was essential to the creation of a supportive environment for the interface between the economy and scientific institutions, and for the promotion of cooperation in all three sectors toward the achievement of the economic goals. In this context, the role of the European Union is to reduce barriers for investments, capital flows and employment.

2.3. Clusters in the European Union

Since the early 1980s, clusters were recognized in the European Union as an effective instrument for achieving economic growth and development. For individual regions the cooperation between economic actors, along with their market competition, became a spur for a higher level of productivity and innovation inside related groups in relation to similar ones in other countries. Instruments of cohesion policies are, therefore, also used to improve cluster development.

Over time, the strengths and weaknesses of applied approaches have become apparent among EU member states, but particularly valuable for the achievement of the objectives of economic development was cluster capability to provide a boost for achieving the economic and scientific potential of individual regions. Since the late nineties, synergy-oriented public policies, business initiatives and scientific institutions can be seen to enable the creation of strong clusters. In finding answers to global challenges, the European Union also recognizes the role of research and development as well as innovation processes in the advancement of

economic growth and regional development, and therefore encourages the establishment, improvement and excellence of cluster support with various instruments.

In 2006, the European Commission published the strategic document *Putting Knowledge into Practice: A Broad-Based Innovation Strategy*[^81] which mentions clusters as important holders of growth and development and states the intention of promoting clusters with public policies. That same year the Europe INNOVA project began with the aim of creating a regional clusters survey among the old 15 EU[^82] member-states, both to determine which policies support the establishment and development of clusters at the national level and to propose further initiatives for public policies to improve the state of innovation and European economy competitiveness. An overview of the clusters situation has confirmed the unevenness of conditions for clusters development among the new member states in comparison with 15 old EU member states. This is particularly germane to restrictions associated with trade, work-force mobility and investments, with regard to old Europe, and between the new EU member states. The historical legacy of planned economies in these countries has left its mark on the allocation of economic resources in a way that is not based on entrepreneurship and economic efficiency but on political decisionmaking. The first act of The Europe INNOVA initiative entitled *Innovation Clusters in the 10 New Member States of the European Union*[^83] suggests that increased competitiveness should be based on a geographically efficient allocation of resources. In countries with a relatively weak public sector, the European Union needs to help strengthen cooperation between actors within clusters with the dissemination of knowledge, experience and tools for the realization of a new and qualitatively different development and also focus and coordinate the implementation of various existing policies (SME policy, regional policy, innovation policy, etc.) along with achieving synergic effect in supporting cluster development. The INNOVA project was focused in its second phase (2009-2012) on three European innovation platforms which were thematically oriented to knowledge-based services, collaboration of clusters and eco-innovation, with a particular attention given to SME clusters.[^84] At the same time, the European Cluster Alliance[^85] was established as a platform at a European level for enabling discussions about policies for cluster development. The initial goal was to help policy-makers at the national and regional levels on the optimal routing of policy for cluster development. The activities of ECA today are expanding towards support for the development of new industries through clusters in Europe and improving international cooperation of clusters.

In the previous financial perspective (2007-2013) at the EU level, cluster development was enforced through various policies, from directing 25% of the Cohesion Fund budget for research and development activities, through the adjustment of state aid rules to allow non-exclusive financing of cluster activities, the *Regions of Knowledge* initiative in the FP7 programme for research and development, and the creation of the *European Cluster Observatory* and the *European Cluster Excellence* initiatives.

The *Regions of Knowledge* initiative was aimed at strengthening the innovation potential of European regions by linking research and technological development to economic development. This approach brought more focus to the regional integration of clusters,


[^82]: With them the review also encompassed Turkey, Bulgaria, Romania, Switzerland, Norway, Iceland and Israel.

[^83]: Innovation Clusters in the 10 new member states of the European Union, Christian Ketels, Orjan Solvel, Europe INNOVA paper No.1, European Commission, DG Enterprise and Industry


businesses, research institutions, universities and the local and regional public sector. Hence the aim was not only to improve the investment capacity of the regions, but also to strengthen their competitive power, primarily in terms of the capacity for the generation of new knowledge and global networking. The Internet platform European Cluster Observatory (ECO)\textsuperscript{86} was drawn up in early 2007 as a juncture where cluster employees, creators of public policies and scientists can access information about clusters and European cluster policy analysis. Beyond generic data on clusters, it was possible on this platform to access information on the state of regional competitiveness, cluster networks, as well as best business practices in clusters. European Cluster Excellence\textsuperscript{87} is a European Commission’s initiative from 2009 which also talks about efforts made by the Commission over the last fifteen years to insure conditions for a better functioning of clusters. This initiative is primarily focused on improving the efficiency of cluster manager efforts in managing clusters, and in creating both a clusters knowledge base and quality indicators in cluster development. The strategic objective of the European Union in the new budget period is smart, sustainable and inclusive growth. More precisely, the creating of new jobs, an increase of employment and sustainable growth are the most important factors for European competitiveness in the global market.

Despite the efforts made so far and the results achieved in the field of cluster development, in preparing the documents for the new programme period (2014-2020) it has been ascertained that although the European Union has a large number of clusters there are not so-called world-class clusters.\textsuperscript{88} The new period, therefore, plans policy measures for continued improvement of conditions for cluster development and operation. Cohesion policy from 2014 to 2020 mentions clusters in the context of the national strategies for research and innovations that lead to smart specialization. Smart specialization is oriented towards the use of regional specificities for achieving economic growth, targeting research investments, development and innovation, according to the needs of the business sector and for the implementation of public sector development strategies. Innovation is a priority, for the realization of which a smart allocation of public funds into research is needed, in order to bring about the synergies of all the participants in the process. Smart specialization is possible if all the stakeholders share the vision for the development of their areas, and work together to realize it. As a prerequisite for using funds from the European Regional Development Fund, each member state is obligated to submit a national smart specialization strategy to the European Commission, before creating individual operational programmes. Smart specialization strategy marks a change from the previous regional policy that used to transfer funds to the less developed regions. It is now seeking regional specialization and the exploitation of the innovation potential of regions and their connection with the scientific, research and public sectors.

3. Implementation of the cluster policy in Croatia

3.1. The Identification of the Role of Clusters in Economic Development

The creators of public policies in Croatia have recognized clusters as a desirable model for encouraging the development of competitive potentials in the Croatian economy. The Ministry of Economy, Labour and Entrepreneurship drew up a strategy of cluster

\textsuperscript{86}http://www.clusterobservatory.eu/index.html#!view=aboutobservatory;url=/about-observatory/(accessed 11 March 2014)

\textsuperscript{87}http://www.cluster-excellence.eu/3552.html(accessed 11 March 2014)

development in the Republic of Croatia 2011 – 2020, which was adopted by the government of Croatia in April 2011. This document defines the strategic approach to cluster development; the policies for their development, specific goals and measures for their attainment have been ascertained. In line with the orientation of the Lisbon agenda and the strategic document Europe 2020, within the strategy of cluster development in the Republic of Croatia, business clusters were recognized as a “tool for the strengthening of the competitiveness of the Croatian Economy.”89 The goals of their establishment are given as the increase of export, introduction of new technologies to the economy, the improvement of conditions for innovation as well as the interconnection of complementary sectors. At that time Croatia had around ninety registered clusters, of which 46 clusters received financial support in the period of 2007 – 2013 for their work, for a total of 35 million HRK.90 Despite all of this, it was evident that the existing clusters were not achieving the expected impacts.

3.2 Support to Cluster Development Project

Support to Cluster Development project was conducted in Croatia in the period from 2011 to 2013 to continue to assist in cluster development, and help in their profiling.91 The project was financed with EU funds as part of the IPA programme. The goal of the project was to improve the competitiveness of the Croatian economy, through better direction of support for cluster development. An analysis of cluster sector determined that the absence of cluster financing criteria to evaluate the propensity of clusters to contribute to growth and economic development resulted in the further entrenchment of those whose existence was not sustainable. A failing of the existing clusters, proved to be the lack of the operationalization of the concept of triple helix cooperation. Additionally, there was an absence of “ownership” found among the participants in the clustering process of that type of participation. Furthermore non-selective approaches to the financial support of clusters which failed to result in the formation of operational structures that could bring about the cooperation of business subjects and scientific institutions, the dominant local character of established clusters (although several were established with national and international reach), the lack of guidance in developing cluster activities or the existence of real connections between clusters as representatives of business sectors and the scientific community. The point is about a modern, matrix and distributed approach, with channelled development of innovation capacities, which require synchronized and collaborative activities of the public and the private sector, respectively, the public administration, the economy and the scientific community (Radman, 2011, 48).

After analysing the state of the cluster sector and organizing educational and other training activities, which were run for cluster members and their leadership and as well as developing three competitiveness clusters, an implementation plan was drafted by the end of the project for supporting cluster development strategy.92 The plan sets out not only the barriers that the cluster sector is facing, the deficiencies in understanding the development of the type of cooperation which could enhance the impact of cluster activities and increase their contribution to economic growth, but the document provides concrete recommendations for the development of policies which would advance the impact of cluster activities. The most

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91Project Support to Cluster Development, Contract No. IPA2007/HR/16IPO/001-020601
important area in which the operation of clusters should be improved is precisely the realization of the triple helix model of cooperation, where the detailed activities indicate what each of the participants in the triple helix model of cooperation should perform.

Regarding this, very important are trust and cooperation based on competencies that ultimately can provide concrete and measurable results. Achieved results are the main criteria for extension of business cooperation and eventually connection with new stakeholders.

3.3. The Competitiveness Cluster in Croatia – The Current Situation

In keeping with recommendations in the Support to Cluster Development project for cluster development support and based on the selection of twelve economic areas with the largest potential for competitiveness, all twelve competitiveness clusters were developed. Clusters contributed to the process of developing smart specialization strategy for Croatia, although further significant activities were lacking after they were founded. The work of the clusters is still being guided by the Agency for Investments and Competitiveness and cluster members are not clear as a rule about how their work will be guided going forward. Existing competitiveness clusters have the legal form of an association. In 2014, aside from participating in activities on the development of the Smart Specialization Strategy, their activities have been reduced to meeting legal obligations (adoption of annual financial statements and annual reports), while the proposals for the plan of activities in 2014 that was presented to the clusters Management Committees for consideration and implementation, were met with reservation.

Although it is evident that the economic situation and the existing constraints of the government budget require rational allocation of budgetary resources, the national funds allocated for the operational function of clusters are insufficient for any significant activity, just a year since they were established. Although future plans have clusters co-financing their activities with European Union funds, for now this is not a possibility. As the beginning of the new financial perspectives requires from each member state to first develop obligatory national strategic documents and operational programmes to access European Regional Development Fund support for investment in research and innovation, clusters face a period of limited options.

To improve cooperation among the sectors which currently cooperate poorly, there obviously needs to be an incentive to connect within the cluster framework, but that initial push is missing because only meager funds were appropriated for the financing of joint cluster activities.

4. Implications for managers

Managers must monitor the policies and measures of the government systematically, and this knowledge should be enhanced by a systematic market analysis. At the same time, an appropriate strategy should be developed for connecting in clusters, as the result of visionary business thinking. Knowledge is already the primary economic engine for instances when small and medium business entities have no capacity for generating independently all the necessary knowledge. Besides this, managers must pay special attention to the engagement of more creative individuals who will collaborate with the scientific community and state administration. In this regard, specific models for motivation should be developed. The final objective of clusters, i.e. interconnection of the state administration, science and economic subjects, is the enhancement of innovation potentials and the placement of new products and services on the market. Partners must have profound confidence in each other, because the innovation process is very risky. One of the managerial tasks is the articulation of an
appropriate organizational culture, ensuring open communication channels. Flexibility and teamwork are just some of the components for successful cluster operation in terms of dominating with intangibles such as quality, speed, and design.

5. Conclusion

The fundamental goal of this paper was to explore why the present activities on the development of competiveness clusters are insufficient for the functioning of the triple helix model. National public policies have recognized competiveness clusters as catalysts of growth which are based on regional comparative advantages, innovations and new knowledge. The development of connections between triple helix partners is a pre-condition for attaining this goal; meanwhile, the absence of such cooperation is the missing link in the Croatian economy. Therefore it is of special importance that at the moment when the operational programmes of the Republic of Croatia are being developed for the use of structural funds and the Cohesion Fund of the EU, that the Croatian Government encourages further activities of competitiveness clusters with national funding. The challenges of the economic crisis, the decline in GDP, the rise in unemployment and budget shortages should be incentives for investing in sectors with the potential for improvement and acceleration of economic development, as the lack of concrete activities for the actualization of new qualitative links between these cluster partners slows cluster development and achieving competiveness. Innovation is a priority. A smart allocation of public funds for the research and achievement of synergy of all participants is what is needed to get there, as smart specialization is feasible if all the participants share the developing vision for their area. Analysis has shown that clusters provide a framework for the implementation of efficient public policy and public funding for advancing economic development, while the lessons learned for decision-makers at different levels should serve as guidelines for the efficient application of activities to promote development of competitiveness clusters in the Republic of Croatia. This is imperative for new economic circumstances which require a new paradigm of action based on alliances and various forms of business associations where the processes can successfully realize the cluster structure. The constant innovating and launching of new products and services requires the generation of new knowledge and the engagement of creative individuals and small and medium business entities which could successfully achieve this with the help of the cluster. This is a framework for realizing sustainable competitiveness for the majority of economic subjects and the state administration should provide these processes with a supportive environment, something that has still not been fully realized in Croatia.

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