

ENSURING EFFICIENCY CONTROL OF INSTITUTIONAL ENVIRONMENT OF THE CLUSTER

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ABSTRACT

As experience of the developed countries shows, the best solutions to the problems related to ensuring competitiveness of enterprises can be found within clusters. Drawing up mechanisms for government regulation of the cluster will facilitate formulation of strategies and plans of cluster development which is an important competitive advantage of the modern economy. The purpose of this study is to research theoretical and methodological approaches to ensuring efficiency control of the institutional environment of the cluster. The approach to solving this problem is based on institutional methodology which offers innovative solutions within the frames of local economic development policies. Furthermore, the paper thoroughly examines impacts of government regulation on business development. Particular attention is given to analyzing public private partnership institutions in order to reveal their innovative features. The authors express the opinion that implementation of the principles of economic control of cluster development, as well as monitoring efficiency of transaction costs may help to reduce the negative effect of transaction costs on economic development of Russia's constituent entities. The paper offers the method for calculating performance efficiency of an institution for economic agents in the cluster, as well as efficiency of informal institutions including cases when their economic informality lies in the 'grey (shadow) area' i.e., illegal by nature. Basing on studies of foreign and Russian experience of cluster formation and identification of risks in cluster development, the article formulates recommendations for implementing control principles to ensure effective cluster policy and reduce transaction costs in order to improve government regulation of clusters and development of the country's economy.

Keywords: Government Control, Economy, Institutional Environment, Criteria, Transaction Costs

1. INTRODUCTION

In modern economy characterized by extensive networks of enterprises based on principles of collaboration, mesoeconomic cluster agglomerations generating synergy and multiplicative effects may represent a new quality vector of economic growth (Porter, 2009). Government regulation and control of clusters radically changes the content of the national economic policy (Enright, 1996), since the efforts of government authorities focus not on supporting

certain enterprises and industries, but rather on developing a system of relationships between economic entities, research and education organizations and government institutions (Rosenfeld, 1997). The practical importance of this approach lies mainly in the opportunities to formulate and implement large national-and regional-scale investment and innovation projects.

Issues of government regulation of the cluster have been studied in works by (Liu and Chen, 2004; Dritsaki and Adamopoulos, 2005; Kim *et al.*, 2014).

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However, some aspects of government regulation and development of clusters remain understudied. Specifically, more attention should be given to the process of development and implementation of government regulation of the cluster as an economic system and measurement of its efficiency.

2. DATA AND METHOD

Most studies on the problem of efficiency of institutional environment inside the cluster are devoted to comparative analysis of transaction costs of economic activity. In the modern market economy, the nature, structure and size of transaction costs are determined by a wide range of political, economic, technological and social factors. Hence, minimization of transaction costs as a key function of institutional environment of the cluster allows us to consider costs of interactions between economic agents in the cluster to be the main criterion for evaluating its efficiency.

In general, an institution's performance efficiency for economic agents can be defined as the ratio of the benefits of transaction costs reduction and the institution's maintenance costs and/or institutional constraints loss:

$$IE = \frac{TC_1 - TC}{CIM + LIL}$$

Where:

- IE* = Institution efficiency
- TC* = Transaction costs
- CIM* = Institution maintenance costs
- LIL* = Institutional constraints loss

Efficiency of informal institutions can be evaluated using the following formula:

$$UIE = \frac{LAB}{CII + LUL}$$

Where:

- UIE* = Informal institution efficiency
- LAB* = Losses associated with Administrative burdens
- CII* = Informal interactions costs
- LUL* = Informal constraints loss

If the informal institution is of a 'grey' (illegal) nature, its efficiency can be evaluated using the following formula:

$$CIE = \frac{CL + LAB}{CII + LUL + RCA}$$

Where:

- CIE* = Informal 'grey' institution efficiency
- CL* = Losses associated with activity legitimization
- LAB* = Losses associated with administrative burdens
- CII* = Informal interaction costs
- LUL* = Losses associated with informal constraints
- RCA* = Losses associated with risks of illegal activities

3. ANALYSIS AND RESULTS

Formation of a certain type of market structures, including clusters, may, on the whole, be regarded as a response to excessive transaction costs. At this point, integration processes in Russia are characterized by aggregation and consolidation of enterprises. This implicitly proves the desire for diversification and economic control of enterprise risks associated with imperfect institutional environment and excessive transaction costs. It should be noted that control over efficiency of costs or any other category may be an extremely complicated and expensive procedure. An example would be the control which the government exercises over taxpayers since it has to maintain the costly tax-collection apparatus.

One of the most interesting ways to optimize the efficiency control of transaction costs consists in eliminating excessive control procedures and reducing the amount of data being collected. The main principle that should be adhered to is reduction of excessive information, i.e., 'do not collect more information than you can process'.

Sometimes data collection services do not manage to analyze information, all their time is spent on collecting it. It would be reasonable to focus on weakest aspects, i.e., areas where problems arise more often. This would allow to solve the core of the problem more efficiently while saving transaction costs related to data collection and processing.

Integration trends in the Russian economy are mainly associated with transition processes and enterprises' adaptation to the imperfect market conditions. The natural reaction of a rational economic agent to excessive transaction costs would be trying to independently reduce them. But as a result, the reproduction system may fall into an institutional trap. Since it is impossible to rely on natural tendencies of transaction costs to decrease, the

need arises for the government active interference in the process of their 'natural' reduction.

As a subject of government control, dual nature of transaction costs, especially transformation processes with a high share of informal sector, as well as significant difference in conditions of functioning of various types of markets require a differentiated approach to transaction costs reduction in the national economy.

Comprehensive mechanism for efficiency control of transaction costs which is used in economy to reduce them involves development of ideology, specification and protection of property rights, standardization of measurements, accounting and reporting, maintenance of monetary system, improvement of law enforcement effectiveness and efficiency, as well as implementation of measures aimed at eliminating unnecessary administrative burdens and infrastructure markets of various transactions.

The basic requirements of institutional changes include recognition of the critical role of the government control of economic development; government's commitment to economic development; accounting of institutional transformation costs; review of efficiency of the current control.

4. DISCUSSION

Let us dwell on the influence of the innovation cluster's institutional environment on the amount of transaction costs of economic activity as a factor of economic development of a territorial unit (Tsvetkova *et al.*, 2013). The first group of transaction costs of innovation entrepreneurship is comprised of the costs of legal activity, i.e., costs associated with registration and licensing of a business, payment of taxes, social security contributions (CC, 2010). Besides lump-sum costs associated with legal entry to the market, an economic agent constantly bears costs of compliance with industry regulations, labor organization standards and may also suffer losses due to inefficiency of arbitration proceedings (Solvell *et al.*, 2008). While opting for illegal forms of business organization, an economic agent is forced to pay a 'grey (shadow) rent' (Feldman, 1994). The second group of transaction costs associated with illegal business activity includes costs of evasion from legal sanctions, income legitimization, high interest rates in the 'grey (shadow)' capital markets, poor protection of property rights, possible loss of reputation (Cortright, 2006).

Costs and losses control, as well as their influence on the efficiency associated with formal or informal interactions can be measured both in terms of value and as a financial equivalent of the amount of time spent, for example, on administrative procedures for incorporation and registration of a business (Rahman and Muro, 2009).

The basic feature of institutional environment of the cluster is the existence of aggregate economic and social relationships between economic entities. Institutions set the frames for selection of counterparties and determine the development of sustainable relationships between them. Thus, we can speak about a network aspect of functioning of the institutional environment of the cluster which sets trajectories of interactions between economic entities. Network analysis for the purposes of government control of institutional environment of an innovation cluster allows to:

- Identify the influence of informal relationships between economic agents within a cluster on competitive ability and efficiency of a cluster as a whole
- Evaluate structural consequences for the economic system of a cluster due to change in equilibrium of institutional environment of a territorial unit
- Determine major and minor objects of institutional environment which form the core and the periphery of a cluster
- Identify the optimal organizational structure of communication channels in a cluster

5. CONCLUSION

Thus, the paper presents the system of criteria and indicators of development of an innovation cluster's institutional environment able to be used for the purposes of government control of performance efficiency of an institution's activities providing reduction of transaction costs of economic agents of the cluster and the territory on which they are located.

The limitations of the paper are general adaptation mechanisms of a social and economic system within the frames of innovation development that would significantly enrich the theoretical aspect of the study.

In future, the authors plan to analyze the complete set of methods of government control of formation and development of innovation clusters under modern economic conditions, namely: Creation of free economic zones, improvement of mechanisms for budget

federalism, expansion of region and municipalities' own tax, implementation of federal target programs of economic development. The results and findings of the work open new prospects for further research.

The results proposed in the study can find application in the sphere of government control under conditions of the knowledge-driven economy. Thus, the proposed efficiency indicators of institutional environment of the cluster were used by government authorities of the Republic of Mari El (Russia) while developing the programs for innovation development of the region's economy. The mechanisms for government regulation considered in this article were used by the city administration of Yoshkar-Ola in the process of formation of a local natural resource-based innovation cluster. It is planned to implement future research findings into the practice of public administration in Russia through long-term programs of collaboration between the Volga State University of Technology and government agencies of the Mari El Republic.

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7. REFERENCES

- CC, 2010. Collaborate: Leading regional innovation clusters. Council on Competitiveness, Washington.
- Cortright, J., 2006. Making sense of clusters: Regional competitiveness and economic development. Brookings Institution, Washington.
- Dritsaki, C. and A. Adamopoulos, 2005. A causal relationship and macroeconomic activity: Empirical results from European Union. *Am. J. Applied Sci.*, 2: 504-507. DOI: 10.3844/ajassp.2005.504.507
- Enright, M., 1996. Regional Clusters and Economic Development: A Research Agenda. In: *Business Networks: Prospects for Regional Development*, Walter, D.G. (Ed.), Berlin, ISBN-10: 3110151073, pp: 190-213.
- Feldman, M.P., 1994. *The Geography of Innovation*. 1st Edn., Springer Science and Business Media, Dordrecht, ISBN-10: 0792326989, pp: 154.
- Kim, Y.D., S. Yoon and H.G. Kim, 2014. An economic perspective and policy implication for social enterprise. *Am. J. Applied Sci.*, 11: 406-413. DOI: 10.3844/ajassp.2014.406.413
- Liu, C.C. and C.Y. Chen, 2004. A computable general equilibrium model of southern region in Taiwan: The impact of the Tainan science-based industrial park. *Am. J. Applied Sci.*, 1: 220-224. DOI: 10.3844/ajassp.2004.220.224
- Porter, M.E., 2009. Clusters and economic policy: Aligning public policy with the new economics of competition. White Paper. Institute for Strategy and Competitiveness.
- Rahman, S. and M. Muro, 2009. The case for clusters. The avenue, a blog of the new republic.
- Rosenfeld, S.A., 1997. Bringing business clusters into the mainstream of economic development. *Eur. Plann. Studies*, 1: 3-23. DOI: 10.1080/09654319708720381
- Solvell, O., C.H.M. Ketels and G. Lindqvist, 2008. Industrial specialization and regional clusters in the ten new EU member states. Special issue on macro and micro level competitiveness. *Competitiveness Rev.*, 18: 104-130.
- Tsvetkova, G.S., N.G. Bagautdinova and A.Z. Novenkova, 2013. The Interaction of formal and informal market Institutes. *World Applied Sci. J.*, 25: 58-61.