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SME'S CLUSTER IDENTIFICATION IN RUSSIA

ABSTRACT. *Russia inherited the economic activity location pattern from the Soviet Union, where the main forms of industrial organization were territorial-production complexes (TPC) - networks of industrial organizations united by a single technological process. In a market economy in the 90s, economic ties within the TPC were destroyed, leading to fragmentation of large enterprises and the formation of a set of independent firms. Some scientists believe that this situation over the last 20 years could serve as a necessary foundation for the clusters' formation .Nowadays the interest in clusters in Russia rises again due to the need to find new mechanisms to support production and innovation in a stagnant economy. The Russian Ministry of Economic Development has developed a project to support the pilot territorial innovative clusters by providing funding for infrastructure formation.*

The aim of our work is to identify clusters as areas of geographical concentration of small and medium enterprises (SMEs). We also wanted to check, whether the existing cluster initiatives correspond to the concentration of economic activity and whether there is any potential for increasing the existing cluster initiatives. In our work, we use the analysis based on the localization index.

We propose a concentration and localization map of small and medium businesses in certain areas in a number of industries. The authors confirmed the existence of traditional and well-known clusters and identified previously unknown concentration of firms that have not declared their interaction yet.

KEYWORDS*:* cluster identification, localization, SME, Russian regions

JEL: C19, L70, R12

INTRODUCTION

Russia inherited pattern of economic activity location from the Soviet Union, where the main forms of industry organization were territorial-production complexes (TPC) - networks of industrial organizations united by a single technological process or the chain of raw materials processing. In a market economy in the 90s, economic ties within the TPC were destroyed, leading to a drop in the level of production, fragmentation of large enterprises and the formation

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of a set of independent and often competing firms. Some scientists believe that this situation over the last 20 years could serve as a necessary foundation for the formation of industrial clusters.

However, in Russia even in the Soviet era traditional industrial and agricultural clusters, formed in the early 20th century or earlier, still existed: Ivanovo textile cluster ("Russian Manchester"), Vologda dairy cluster, Vladimir food manufacturers (dairy products, chocolate), clusters of Folk Arts (Fedoskino, Kargopol, Zhostovo, etc.), Krasnodar wine, Tula machinery, Michurinsk fruit, Tambov sugar, Ural cluster of artistic stone processing, Ural clusters of metal processing, Arkhangelsk fish, Karelian woodworking and others clusters.

Today the interest in clusters rises again due to the need to find new mechanisms to support production and innovation in a stagnant economy in Russia. The Russian Ministry of Economic Development has developed a project to support the pilot territorial innovative clusters by providing funding for infrastructure formation. The program requires an establishment of a cluster development centre or other managerial entity. The selection of cluster initiatives was based on applications from existing innovative clusters. In fact, in most of the cases it was the regional government, who initiated the application process, due to its interest in attracting the additional investment. The approved clusters' analysis shows that in reality they are large industrial TPC, formed in the Soviet period in the main competitive and knowledge-intensive sectors of that time (aerospace industry, nuclear industry, microelectronics, etc.). Many pilot clusters consist of one large industrial enterprise (with the revenue up to 80% of the cluster's total revenue) and several small suppliers.

Certainly, pilot innovative clusters, identified by the Ministry of Economic Development, cannot be viewed as clusters in its "classical" definition. Most of the clusters, formed in Russia, are formed not in innovative sectors, as shown by studies of the Russian Cluster Observatory. The methods of cluster identification of the Observatory were also based on the claims of the clusters themselves, but the criteria weremuch softer. That is, the minimal criterion was the application itself.

But a lot of potential clusters in Russia, that could have been formed, are not formed due to the high level of distrust between firms, due to lack of understanding of the potential benefits, etc., although these clusters can develop due to geographical proximity (high concentration) of firms. International experience shows that cluster initiatives can be an effective mechanism for regional development. There are certain forms of support for interaction between cluster members from the regional administrations. In our opinion, in Russia, the identification of such geographical concentrations of economic agents to promote cluster initiatives is of high importance.

The aim of our work is to identify clusters as areas of geographical concentration of small and medium enterprises (SMEs), regardless of their industry specialization and regional affiliation to determine the potential cluster initiatives. We also wanted to check, whether the existing cluster initiatives (the experience of the Ministry of Economic Development and the Russian Cluster Observatory) correspond to the concentration of economic activity and whether there is any potential for promoting the cluster initiatives and fostering clusters' formation.

According to the international experience, there are several methods of clusters' identification: based on the calculation of the localization index (M. Porter, the method of the Boston Consulting Group, et al.), the analysis of input-output tables, a distance-based methods (E. Marcon, G. Lindqvist, G Duranton, et al.) and qualitative methods (interviews, compiling genealogical tree, cases, etc.). Each method has its advantages and disadvantages in relation to Russian specifics. The localization index method is weakly justified at the regional level because of high differences in population density within the Russian regions. The analysis of input-output tables is impossible due to lack of necessary statistics. Remotely-oriented methods are hampered by the absence of necessary data on small businesses and their geographical coordinates. Qualitative methods are impossible to use in the cases, when initially we do not know about the existence of the cluster. Therefore, only a combination of techniques allows maximum approximation to the identification of the actual spatial patterns of small and medium business.

In our work, we use the analysis based on the localization index on different geographical levels for verification reasons: regions, districts and cities. The data was mostly collected from RUSLANA database[4], containing the information about Russian firms. As a result of our study we propose the concentration and localization map of small and medium businesses in certain areas, in a number of industries. The authors confirmed the existence of traditional and well-known clusters and identify previously unknown concentration of firms that do not declare their interaction.

The article is structured as following. The first chapter is devoted to the overview of theoretical and empirical studies about SME's cluster development and is aimed at answering the question 'Why is it important for SMEs to be clustered?' The second part of the article is about the definition and different methods of cluster identification. The third part consists of calculations using our method for cluster identification in automobile industry. The description of the Russian cluster policy is in the fourth part.

THEORETICAL BASES OF FIRMS' CLUSTERING

[4] http://www.bvdinfo.com/ru-ru/our-products/company-information/national-products/ruslana

The economic activity in general has the extremely uneven territorial distribution: city agglomerations are alternated with not populated territories. The economic activity thus depends on concentration and interaction of people, firms, regional and national communities (Duranton, Puga, 2004).

With the development of evolutionary ideas and institutional approach (North, 1990) in social sciences, the category "locality" as a combination of natural-historical conditions and socio-economic factors became one of the most important in regional science. Historically developed combination of conditions influences modern development of local communities, in particular within the concept of path dependency (Martin, 2010). The innovative development of regions depend on spatial specifics: degrees of concentration, proximity, coherence and a variety of innovative agents and intensity of knowledge flows between them (see, for example, Crescenzi, Rodríguez-Pose, 2011).

The models of new economic geography of P. Krugman (Krugman, 1991) had an essential impact on modern ideas of a space role in social and economic processes. Because of a scale effect and decrease in transport expenses, a firm seeks to focus production near markets and suppliers. It creates an agglomeration, which is counteracted by the centrifugal force generated by immobility of an agrarian sector; industrial firms tend to move to regions with smaller number of domestic competitors.

It is accepted to call a source of the increasing return from firms' concentration – external economy as it is usually done with internal economies of scale. There is a discussion about the reasons of these effects. The first explanation is connected with effects of a clustering (localization), or Marshall's effects (Marshall, 1920; Arrow, 1962; Romer, 1986), the second – with effects of an urbanization, or Jacobs effects (Jacobs, 1969). Effects of a clustering arise at firms' localization of the similar industries; urbanization effects can be shown in two directions: economy from concentration and economy from activity diversification (Boschma, 2009). Urbanization externalities connected with the city size (Rosenthal, Strange, 2004; Neffke, 2009).

In empirical works, the concentration of economic activity (expressed in shares, in localization indexes, in density of population and so forth) or a variety of activities (Gini, Herfindal-Hirshman, Shannon's entropy indexes etc.) are used as the explaining variable. Employment, GRP, productivity growth can serve as a dependent variable. The paper (Beaudry, Schiffauerova, 2009) provide generalized results of the majority of publications on a subject of externalities: clustering effects show positive significant influence in 47% of cases, and urbanization effects – in 45%.

The first effect forms a basis of cluster approach (Porter, 1998), including industrial districts (Marshall, 1890; Asheim, 1995; Albino, Carbonara, Giannoccaro, 2006). The second

effect, serving for studying variety of economic activity and its influence on social and economic development, is more connected with the concepts of agglomeration effects (Audretsch, 1998; Fujita, et al., 2001), regional innovative systems, "self-learning regions" and millieux (Aydalot, 1988).

Scientific knowledge and innovations as a public benefit are characterised as indivisibility, opportunity to use unlimited number of times and in various spheres of action, impossibility to exclude other agents from the knowledge transfer(Nelson, 1959, Romer, 1990). Therefore, innovative activity generates positive effects for other agents (Coe and Helpman, 1995; Park, 1995).

The intensive interaction of innovative agents leads to the knowledge spillovers (Acs, et al., 1994; Feldman, 2000; Audretsch, Lehmann, 2005; Acs, et al.., 2009), increasing labour productivity in the region in general. Knowledge spillover implies that the knowledge created by one company can be used by another one without compensation, or with compensation smaller, than the cost of the knowledge (Sinergiya prostranstva, 2012).

The role of knowledge spillovers in hi-tech clusters in creation of innovative projects and in support of high innovative activity at early stages is proved by success of a number of innovative clusters in the USA (Silicon valley, Seattle, Route 128, etc.), in Canada (Montreal) and in other countries (Saxenian, 1990; Anselin, et al, 1997; Carlsson, 2013). Thus, new innovative companies can be created as "daughters" of large scale hi-tech enterprises.

Every industry has a tacit knowledge, which cannot be formalized, and it is transferred from the teacher to the pupil only during their interaction (Polani, 1985, Asheim, 2002). Regional and local level of research are preferable because of tacit knowledge localization.

Knowledge transfer intensity depends on proximity of agents, but not only spatial proximity is important (Boschma, 2005; 2009): cognitive; organizational (the degree of unity of governing bodies); social (trust degree between contractors); the institutional (the degree of unity of institutes), and technological (the degree of compatibility of technologies).

Traditionally, the cluster is defined as a group of the interconnected geographically concentrated companies with specialized suppliers, service providers, and other connected organizations (including universities, scientific centres, etc.) in the industry (Porter, 1998). M. Porter emphasizes (Porter, 2002) that the geographical proximity of competitors can be favourable in connection with several factors:

• access to specialized factors of production and labour: existence in this district of necessary resources, equipment production, business services, qualified personnel, etc., and also access to the specialized organizations and public benefits: programs of personnel training, the stimulating policy of local authorities, access to the technology transfer centres, etc.;

• access to specific knowledge and competences, including tacit knowledge: extensive data about production technologies, marketing and other specialized knowledge can be collected in clusters;

• complementarity of firms: various services within one production cycle (for example, transport, recycling, etc.), or within an innovative cycle (universities – the scientific organizations – private companies);

• high innovative activity of firms[5]: members of a cluster constantly interact and adopt the newest developments of each other;

• high speed of knowledge commercialization due to the corresponding support of local authorities, existence of skilled personnel, etc.

M. Enright paid special attention to regional specifics of clusters (Enright, 1999). The scientist considers regional level of competitiveness of the country, where the major role is played by historical prerequisites of development, a variety of business cultures, concentration of specific competences and many other things. The regional cluster, according to M. Enright, is a geographical agglomeration of the firms working in one or several related branches of economy.

In empirical researches, the significant role of clusters is shown: in increase of firms' competitiveness (Porter, 1998); in new firms' formation (Bresnahan, Gambardella, Saxenian, 2001; Feldman, 2001; Armington, Acs, 2002; Fritsch, Mueller, 2007; Fritsch, 2011); in firms' survival (Staber, 2001; Fritsch, et al., 2006; Wennberg, Lindqvist, 2000); in increase of profitability of the SMEs within clusters (Zhang, Li, 2008); in increase in SMEs' export (Bair, Gereffi, 2001); in innovative business formation (Saxenian, 1994; Baptista, 1999; Cooke, Schwartz, 2007).

The theories above lack the analysis of service and creative industries: tourism, entertainments, scientific activity and other. The educational and scientific organizations are considered to be less important objects of research. According to the process of the knowledge-intensive production increase, the economists tend to focus more often on scientific and technological interaction within clusters (Karlsson, 2008a).

S. Bresci, F. Lissoni, E. Lorentzen (Bresci, Lissoni, 2001a, b; Lorentzen, 2005) criticize the clustering approach, indicating limitation of their prerequisites. Firstly, readiness of the organizations to share the knowledge in the competitive environment raises doubts. Empirical researches show that the exchange of knowledge in a cluster does not occur so easily as it is considered to be. Secondly, there is no general database, where the enterprises bring data and

[5] The article (Albino, et al., 2006) gave an example of theoretical model describing process of origin of innovations in a cluster, using the agent-based modeling.

from where they can take them. Finally, the tacit knowledge is imparted not because of geographical, but due to social, technological and other types of proximity.

CLUSTERS IDENTIFICATION METHODS

According to M. Porter's approach, "cluster" represents a group of interdependent companies and institutes, functioning in a certain area and connected by their complementarity (Porter, 2000, p. 16). However this definition is, in our opinion, at the same time both incomplete and excessively detailed. Today the concept of a cluster is quite developed and wide applied in the scientific researches; therefore, definition of a cluster in many respects depends on research objectives and the methods chosen (Table 1).

Table 1. Cluster definitions and corresponding clusters identification methods

Definition	**Authors**	**Possible specification**	**Identification methods**	**Comments**
group of firms from one industry, concentrated in one area (for example, in borders of the region, city, etc.)	Porter, 1998, Enright, 1999, Duranton, Overman, 2005; Duranton, Overman, 2008; Ellison, Glaeser, 1997	Potential cluster	indexes of localization (concentration) of economic activity: Ellison-Glaeser, Duranton-Overman and others	minimum possible requirement for cluster identification according to potential cluster effects
group of the firms concentrated in one area from one or several interconnected industries	Porter, 1998; Kutsenko, 2009	Protocluster	calculation of coefficient of localization and the subsequent correlation coefficients between different industries, application of a balance method is possible	there is a new criterion of interrelation between industries for identification of interindustry clusters
group of the interacting firms concentrated in one area from one or several interconnected industries	Porter, 1998; Kutsenko, 2009	Protocluster	methods of sociological polls, analysis of cluster initiatives and network analysis for interaction identification,	a new criterion of firms' interaction already brings elements for cluster policy, but it is really difficult to reveal interaction in practice; it is possible to assume that existence of a cluster initiative is the minimum criterion of firms interaction existence in a cluster

group of the interacting firms concentrated in one area form one or several technologically interconnected industries	Kolosovsky, 1947	Territorial-production complex (TCP)	method of power-production cycle analysis, balance methods, elements of the graph theory for the analysis of technological interaction in a cluster	existence of technological interaction was the main criterion for the territorial-production complex (TPC) identification and development, based on the idea that similar group of resources was processed in TCP, increasing extraction coefficient, diminishing ecological pollution, etc.
group of the interacting firms concentrated in one area from one or several technologically interconnected industries within scientific-industrial complex	Feldman, 2001, Lindqvist, 2009, Kutsenko, 2009	Territorial innovative cluster	analysis of patent citation, joint publications of firms in a cluster, studying of objects of intellectual property, elements of the graph theory	the last researches connect benefits from a clustering with the knowledge spillovers from universities to firms; therefore existence of an innovative component is important in a cluster
group of the interacting firms concentrated in one area from one or several technologically interconnected industries within scientific-industrial complex with management	Ketels et al., 2012	Territorial innovative cluster with management	official demands for receiving subsidies from clusters initiatives; analysis of web-sites information , sociological methods (in particular case-study), etc.	there is the major criterion for implementation of cluster policy – existence of cluster management, institutes and their efficiency, etc.
group of interacting firms, concentrated in one area from one or several technologically interconnected industries within scientific-industrial complex with management, having the synergetic (cluster) effects and forming a system with high efficiency	Bresci, Lissoni, 2001a	efficient territorial innovative cluster with management	methods of mathematical statistics (regression for calculation of a difference in profit between participants of a cluster and out of it), a method of stochastic border (SFA), the analysis of survival; methods of linear programming (including DEA – data envelopment analysis), methods of rating, etc.	95% of identified clusters isn't fitted for this definition because it is very difficult to reveal efficiency, to prove that efficiency is connected with cluster synergetic effect (it is known, for example, that in the cities agglomerative effects prevail); the effect comes after decades of collaboration

Each definition and every method correspond to a certain level of cluster development. Therefore, it is possible to build cluster hierarchy on a level of development; but stages do not always follow one another, passing of all stages is important not for all clusters, various combination of elements from different stages may exist. Thus, these definitions refer to territorial clusters, but there are other approaches for industrial clusters identification, which may not have a territorial binding.

Our technique is based on M. Porter's (Porter, 2003; Quah, Simpson, 2003) and European cluster initiative (Innova, 2008; Lindqvist, 2009) approaches, including calculation of three indexes characterizing ***the number of SMEs, employment and sales*** of firms in considered industry in the region (table 2).

Table 2. The identification of cluster using localization coefficient

Equation	Description
$\mathrm{LQ} = \frac{Emp_{ig}}{Emp_g} \Big/ \frac{Emp_i}{Emp}$	LQ – «localization coefficient» Emp_{ig} – number of SMEs' employees (firms, sales) in industry *i* in region *g* Emp_g – number of SMEs' employees (firms, sales) in the region *g* Emp_i – number of SMEs' employees (firms, sales) in industry *i* in Russia Emp – total number of SMEs' employees (firms, sales) in Russia
$Size = \frac{Emp_{ig}}{Emp_i}$	$Size$ – size of industry *i* in region *g* Emp_{ig} – number of SMEs' employees (firms, sales) in industry *i* in region *g* Emp_i – number of SMEs' employees(firms, sales) in industry *i* in Russia
$Focus = \frac{Emp_{ig}}{Emp_g}$	$Focus$ – «focus» of industry *I* in region *g* Emp_{ig} – number of SMEs' employees (firms, sales) in industry *i* in region *g* Emp_g – number of SMEs' employees (firms, sales) in region *g*

Source: Porter, 2003; Kutsenko, 2009; Kisilev at al., 2011

Every region gets a 'star' for an industry if:

- The region has "Localization Coefficient" ≥ 2;
- The region is among 10% of the regions, leading on an indicator "Size";
- The region is among 10% of the regions, leading on an indicator "Focus".

CALCULATION OF LOCALIZATION COEFFICIENT IN THE RUSSIAN AUTOMOBILE INDUSTRY

Automobile industry is rapidly developing in Russia due to foreign investment of the largest corporations: Volkswagen, Toyota, Nissan, Volvo, Hyundai, etc. There are emerging clusters of SMEs (mostly suppliers of automotive components) around the large soviet and new factories. That is why it is so important to identify potential clusters according to our methodology. The figures 1-3 shows the results of three indexes calculations, characterizing the number of SMEs, employment and sales in automobile industry.

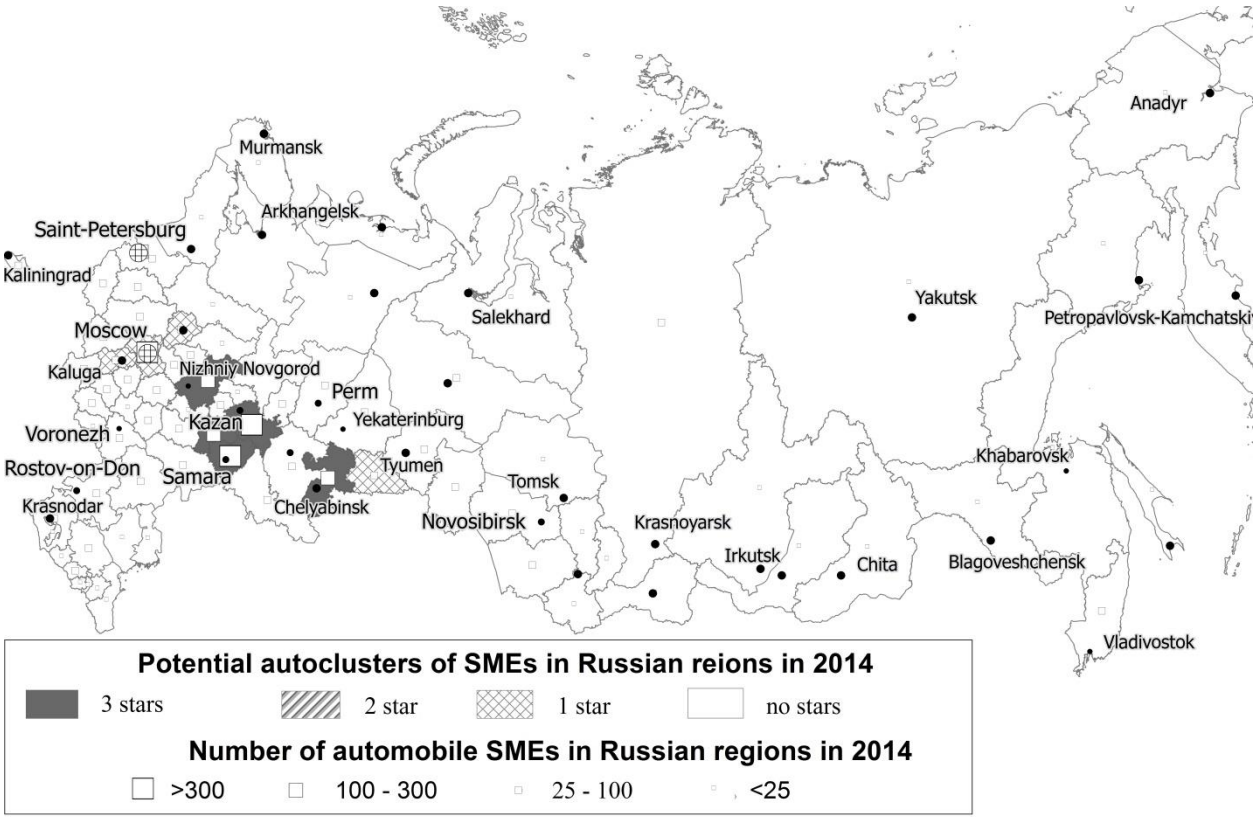

Figure 1. Potential regional autoclusters of SMEs, identified by number of firms

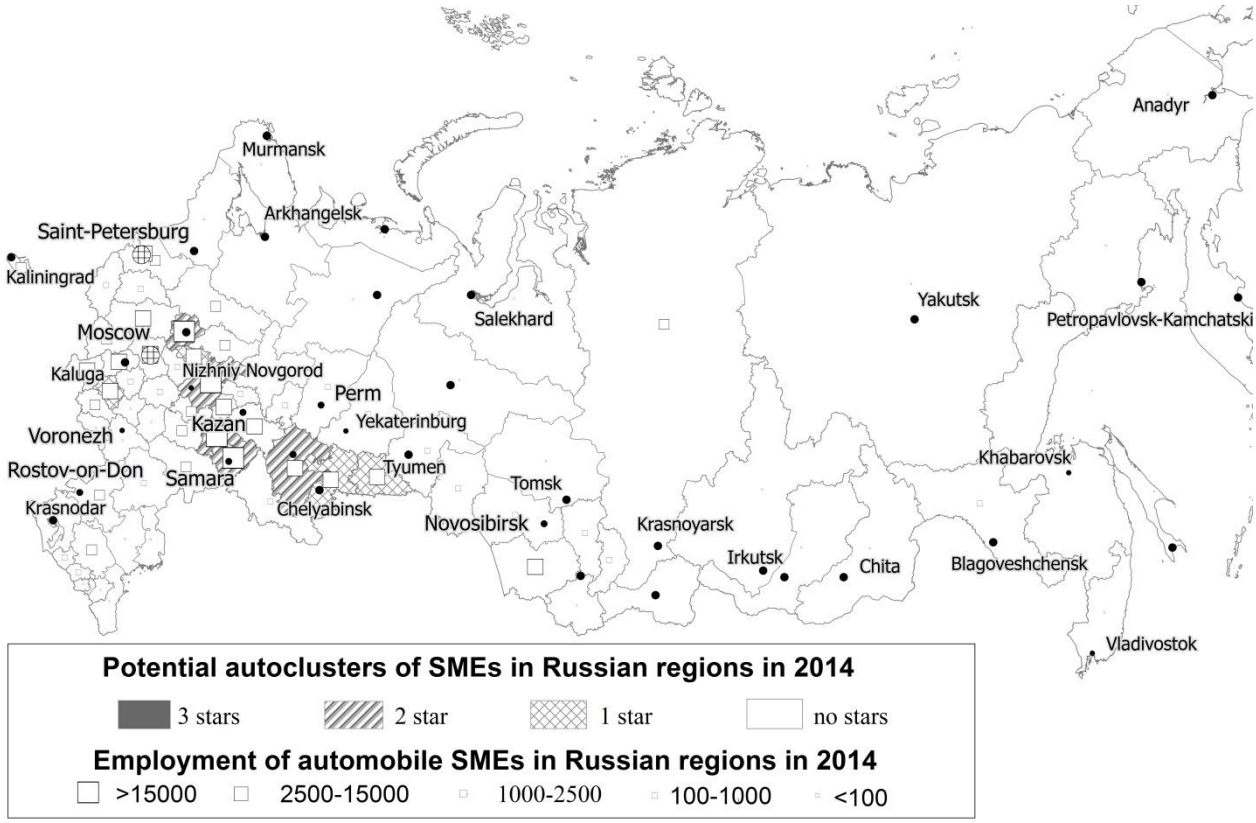

Figure 2. Potential regional autoclusters of SMEs, identified by employment

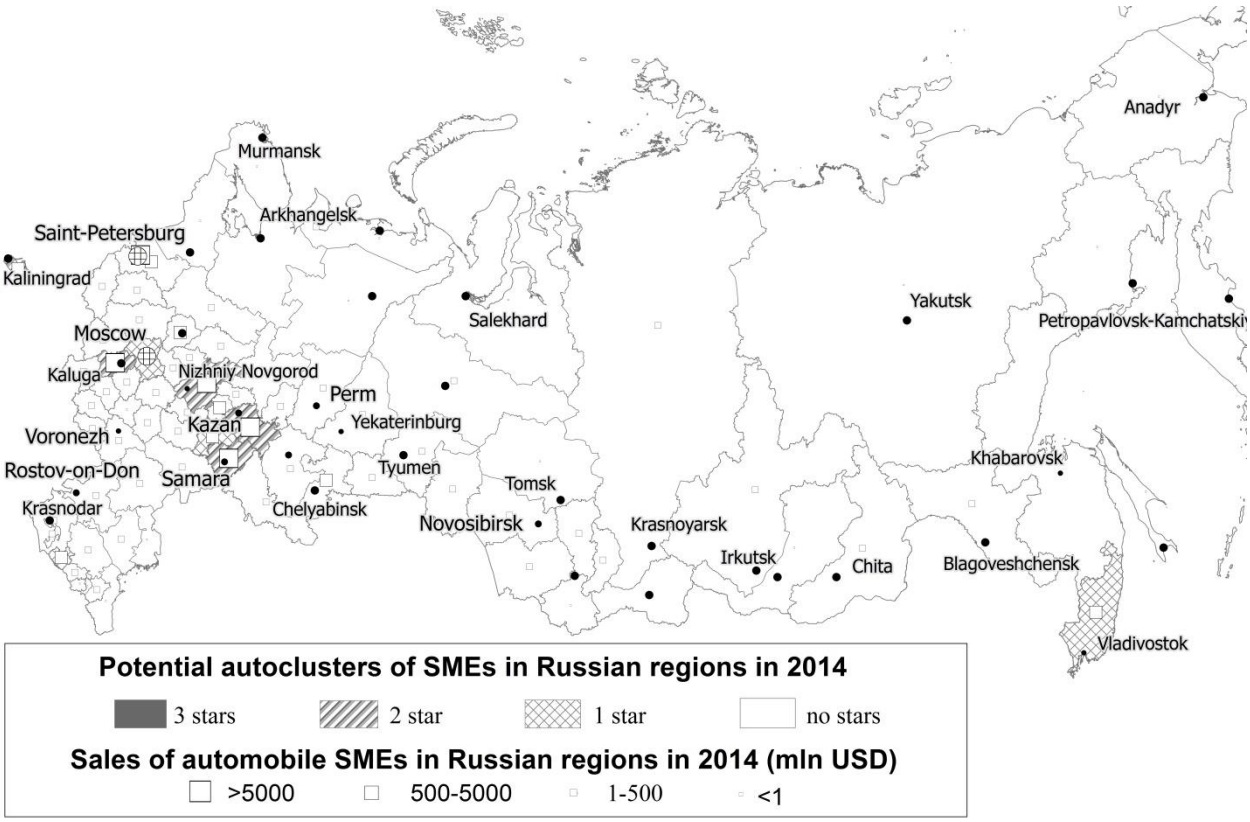

Figure 3. Potential regional autoclusters of SMEs, identified by sales

In the table 3, there are regions-leaders for potential automobile clustering.

Table 3. The regions-leaders for potential automobile clustering

Regions-leaders	Number of firms	Stars (firms)	Employment	Stars (employment)	Sales (mln USD)	Stars (sales)	All stars (max=9)
Nizhny Novgorod Region	271	3	18253	2	8589	2	7
Samara Region	436	3	25040	2	7818	2	7
Ulyanovsk region	143	3	29576	2	1656	1	6
Republic Of Tatarstan	319	3	5805	0	5784	2	5
Chelyabinsk region	237	3	11658	1	1267	0	4
Moscow	448	1	14733	1	5778	1	3
Saint Petersburg	206	1	7557	1	8772	1	3
Kaluga region	43	1	2728	0	9110	2	3
Yaroslavl region	51	1	21767	2	755	0	3
Kaliningrad region	43	0	2022	0	4581	2	2
Kurgan region	20	1	6086	1	244	0	2
Moscow region	160	1	4253	0	3828	1	2
Republic Of	72	0	14769	2	483	0	2

Bashkortostan							
Ivanovo region	16	0	4082	1	277	0	1
Oryol Region	17	0	3026	1	118	0	1
Primorsky Krai	21	0	35	0	2396	1	1

New SMEs clustering is in the Republic of Tatarstan, Saint Petersburg and Kaluga region; most of other potential clusters are based on soviet automobile factories.

THE TERRITORIAL INNOVATIVE CLUSTERS DEVELOPMENT IN RUSSIA

At the beginning of 2012, the Ministry of Economic Development of the Russian Federation initiated competitive selection of projects on development of territorial innovative clusters in Russian regions. Regional administrations declared more than 100 cluster initiatives, among which 25 clusters got support from the federal budget for infrastructure development (Abashkin, et al., 2012, page 16-26). The selected clusters have to correspond to one of the last stages according to tab. 1.

Innovative territorial clusters are located generally in regions with the high level of innovative development according to the rating of the Association of innovative Russian regions (AIRR) (Rating…, 2013). From 21 clusters considered in this work 13 (62%) are located in regions "strong innovators" and 5 (24%) – in "medium-strong innovators" (see fig. 4)

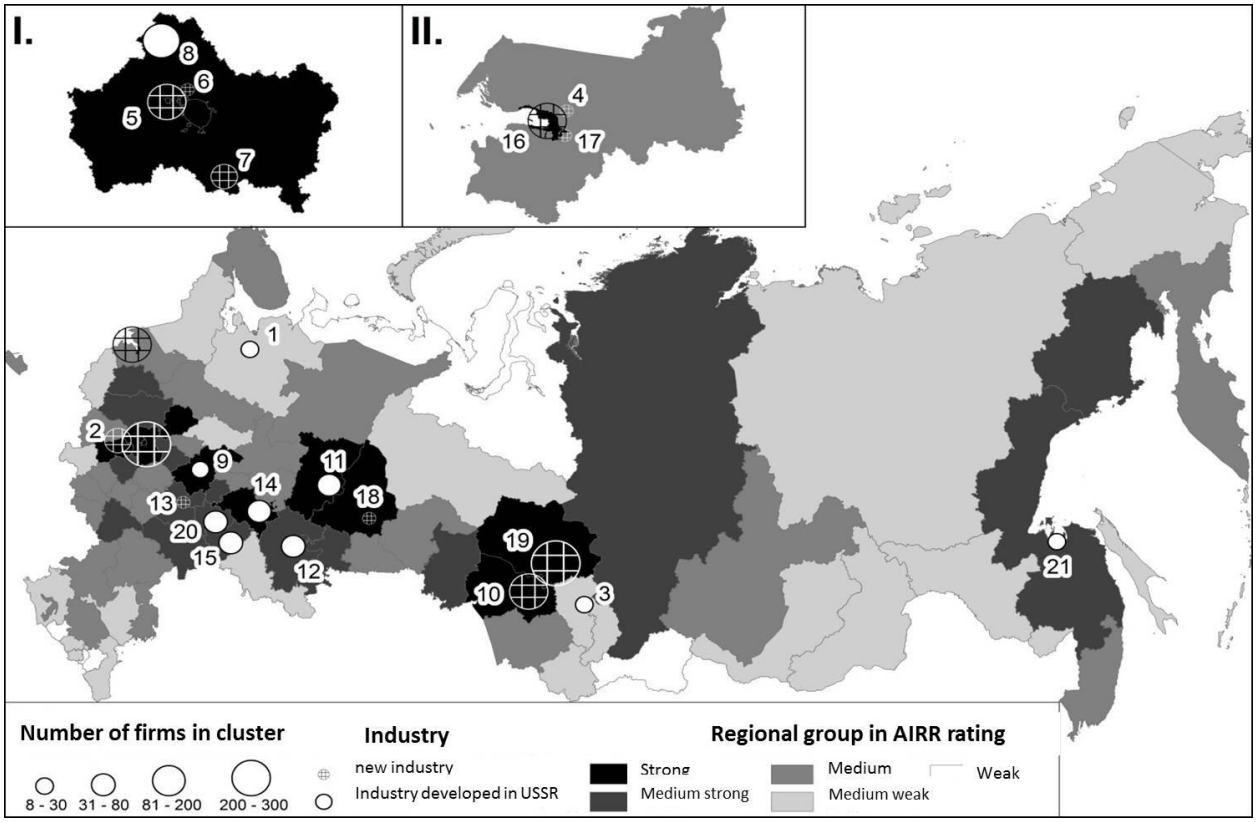

Figure 4. Russian territorial innovative clusters (see more (Zemtsov et al., 2015))

Inset: I - Schematic map of Moscow region and Moscow, II - Schematic map of Leningrad region and St. Petersburg.
The numbers are shown on a map: 1 - Shipbuilding innovative regional clusters (Arkhangelsk region), 2 - Cluster of pharmaceutics, biotechnology and biomedicine (Kaluga region), 3 - Complex of coal processing (Kemerovo region), 4 - Cluster of medical, pharmaceutical industry and radiation technologies (Leningrad region), 5 - Cluster "Zelenograd" (Moscow), 6 - Cluster "Fiztech XXI» (Dolgoprudny, Khimki) (Moscow region), 7 - Biotechnological innovative regional clusters Pushchino (Moscow region) 8 - Cluster of nuclear physics and nanotechnology in Dubna (Moscow region), 9 - Nizhny Novgorod industrial innovative cluster in the automobile and petrochemical industries (Nizhni Novgorod region), 10 - Innovative regional clusters in the field of information and communication technologies (Novosibirsk region), 11 - Innovative regional clusters of rocket engine "Technopolis 'New Star'" (Perm region), 12 - Petrochemical regional clusters (Republic of Bashkortostan), 13 - Energy-efficient lighting and intelligent lighting control systems (Republic of Mordovia), 14 - Kamsky innovative cluster in the automobile and petrochemical industries (Republic of Tatarstan), 15 - innovative regional aerospace cluster (Samara region), 16 – Cluster of Information Technology (St. Petersburg), 17 - Cluster of pharmaceutical and medical industry (Saint-Petersburg), 18 - Titanium cluster (Sverdlovsk region), 19 - Pharmaceuticals, medical technology, information technology and electronics (Tomsk region), 20 - Nuclear Innovation Cluster of Dimitrovgrad (Ulyanovsk region), 21 - Innovative regional clusters of aircraft construction and shipbuilding (Khabarovsk Territory)

Clusters also differ by number of participants and industry. Abroad, a cluster have to have not less than 30-50 profile companies. The main problem of the identified clusters is the insignificant number of SMEs and insufficient level of interaction between them. There are less than 50 SMEs in 18 from 21 considered clusters.

Eleven clusters are developed based on new industries (information technologies and pharmaceutics), while twelve clusters are based on the former large Soviet enterprises in traditional high-tech industries (aerospace, shipbuilding, nuclear technologies, petrochemistry).

CONCLUSION

The main result of the research is the synthesis of the existing theoretical and empirical approaches to clusters' research, classification of clusters by their level of development and the corresponding classification of identification methods. The empirical results are connected with an adopted methodology for SMEs' cluster identification and an example of Russian cluster policy.

All theoretical constructions, explaining emergence and development of SMEs' clusters, can be reduced to three main approaches:

• localization effects of concentration by A. Marshall (to Marshall, 1890; Romer, 1986);

• increase of competitiveness according to M. Porter (to Porter, 1998; Delgado, Porter, Stern, 2010);

• emergence and development of network structures for SMEs' interaction (Feldman, Francis, Bercovitz, 2005; Casper, 2007; Karlsson, 2008).

It is possible to claim that definition of a cluster and the applied analysis techniques are considerably defined by a level of development of the cluster and the researcher's purposes.

The sufficient condition for cluster identification is a high industrial concentration in the area. The definition for the most developed cluster is significantly broader: group of interacting firms concentrated in one area from one or several technologically interconnected industries within scientific-industrial complex with management, having the synergetic (cluster) effects and forming a system with high efficiency. About 95% of all clusters, studied in literature, do not correspond to the last definition.

Every stage of cluster development corresponds to the identification methods; the most widespread are: indexes of localization (concentration) of economic activity, calculation of the localization coefficient , balance methods, methods of network analysis with elements of the graph theory, sociological methods (in particular a case-study), etc. In Russia some methods of regional clusters identification were applied (by M. Porter's techniques), but methods of the analysis of localization of economic activity and methods of the network analysis are seldom.

The Russian cluster policy is not based on the existing practices of identification of clusters. The latest support measures have been based only on cluster initiatives of the regional authorities. This has led to the situation that the considerable part of the developed clusters is out of sight not only from federal, but also from regional administrations.

Most of the Russian territorial innovative clusters are based on Soviet heritage despite the fact that there are many growing sectors of economy with high cluster potential, including automobile industry.

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