

## THE PERSPECTIVE DIRECTIONS OF RESEARCHES IN THE FIELD OF SMALL AND MEDIUM BUSINESS DEVELOPMENT

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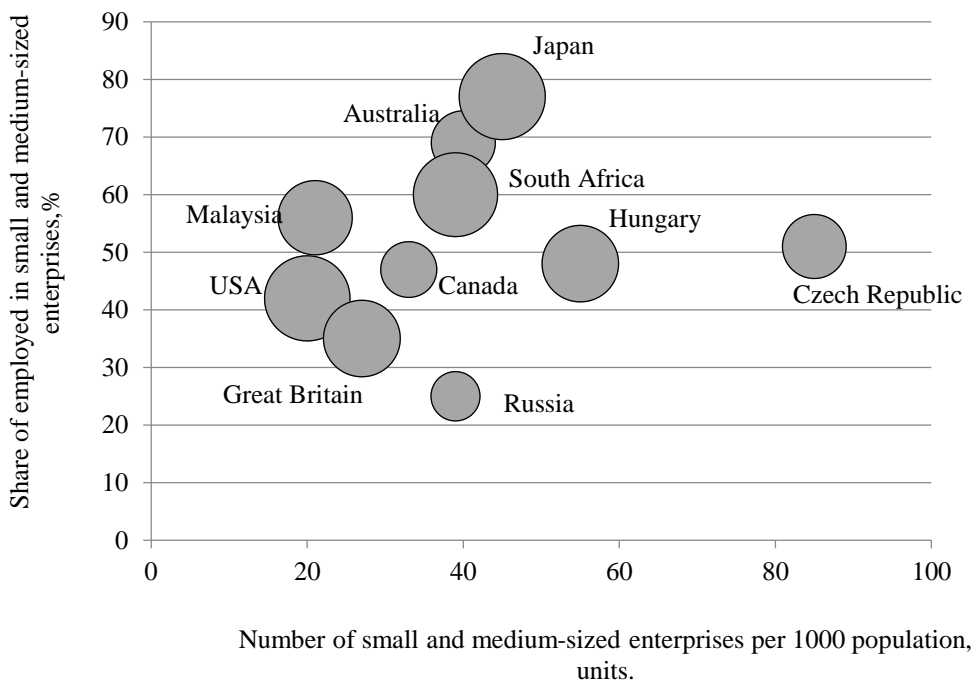
**Abstract.** *Small and medium business plays an important role in the social and economic development of many countries. In spite of its importance, small business faces many problems. As a result, according to some estimates, about 30% of new small businesses stop running during two years, and about 50% – within five years; according to other estimates – about 60% of businesses get closed during three years. These circumstances cause growth interest in various aspects of the development of small and medium businesses from the scientific community. At present higher flow of information in all fields emphasizes the necessity to identify methods and approaches to optimize its structure and determine key researches. The purpose of this article is to set out perspective directions in reviewing the development of small and medium business based on the bibliometric analysis. The study used the following methods and tools: a) CiteSpaceV program, which allowed to define the perspective directions of researches on the basis of a co-citation method and to visualize research fronts; b) the semantic analysis methods, which allowed to define the directions of researches on the frequency of used terms. The scientific publications presented on Web of science and Russian Science Citation Index from 2010 to 2016 formed information base of a research. The study revealed the main directions in the area of entrepreneurship of small and medium businesses that include market orientation, international entrepreneurship, innovative knowledge, financial crisis, data quality factor, and social responsibility. The results show that there are considerable differences between the directions of researches of the Russian scientists and the world scientific community. Russian publications are more aimed at theoretical rather than practical research. A bid internal problem is the absence of feasible space of knowledge, uniting scientific schools, competence centers, scientific centers and working groups. The study investigates the causes of the gaps in the field of small and medium businesses studies. Comparison of research fronts on foreign publications with Russian subjects may form a basis of forecasting perspective research directions.*

**Keywords:** *small and medium business; research fronts; bibliometric analysis.*

## Introduction

Small and medium business plays an important role in the social and economic development of many countries. In spite of its high social and economic importance, small business faces many problems. As a result, according to some estimates, about 30% of new small businesses stop running during two years, and about 50% – within five years (Solomon, Bryant, May, & Perry, 2013); according to other estimates – about 60% of businesses get closed during three years (Mrva & Stachová, 2014).

Although now Russian authorities emphasize the importance of developing this sector of the economy, its share in the national economy is much lower than abroad (figure 1).



**Figure 1. The number of small and medium enterprises, the average size of small and medium enterprises and the share of small and medium enterprises in the GDP of various countries (Source: Ministry of Economic Development of the Russian Federation, 2016)**

Comparing the level of small and medium business development in Russia with other countries, we can see that we are lagging dramatically behind by a number of indices. For example, the share of small and medium business in GDP of many foreign countries exceeds 40% (circumference diameter in Figure 1), while in Russia it is 22%. The similar situation is with the share of personnel employed in the small and medium business. In Russia, the small and medium business provides employment of 25% of the population, while in developed countries this parameter varies from 35% to 80%. The number of small and medium businesses per 1000 people in Russia is more or less the same as other countries. But the average amount of added value, produced by one small or medium business, is much lower than abroad.

Therefore, it is a must to carry out a comprehensive analysis, reviewing not only possibilities in developing small and medium business in economic systems but also Government instruments, affecting the development of this sector of the economy. At present, a higher flow of information in all fields emphasizes the necessity to identify methods and approaches to optimize its structure, determine key researches, which constitutes the purpose of this review (Albort-Morant & Ribeiro-Soriano, 2016).

A list of contemporary research fronts is continually updated and published by Clarivate Analytics (Clarivate Analytics, 2017). Recently, a large number of bibliometric studies in the field of entrepreneurship development have appeared. The authors consider various aspects of the development of entrepreneurship, such as the birth of new firms (Dzikowski, 2018), the impact of business incubators (Albort-Morant & Ribeiro-Soriano, 2016), and social entrepreneurship (Rey-Martí, Ribeiro-Soriano, & Palacios-Marqués, 2016). In modern Russian publications some bibliographic reviews are presented, but unfortunately, there are no techniques for conducting a full bibliometric analysis.

The purpose of this article is to set out perspective directions in reviewing the development of small and medium business based on the bibliometric analysis.

### **Methods of research**

Identification of prospective directions for these studies in the field of Small and medium business has been conducted via bibliometric analysis and based on technology of identification of prospective research fronts, the methodic of which is widely represented in foreign scientific publications (Dzikowski, 2018; ; Merigó & Yang, 2017, Laudano, Marzi, & Caputo, 2018, Rey-Martí, Ribeiro-Soriano, & Palacios-Marqués, 2016).

To identify perspective lines of research in the sphere of small and medium business development, we will stick to the following stages.

At the first stage, keywords were established to determine perspective research lines. Used in the capacity of keywords were “SME”, “small and medium enterprises”, “small and medium-sized businesses”, considering logical conditions and combinations. These keywords reflect the maximum extent of the research directions.

At the second stage of the study, a selection of scientific methodological bases for the study was carried out. Currently, there are many databases of peer-reviewed literature such as Scopus, Web of Science, Astrophysics, PubMed, Mathematics, Chemical Abstracts, Springer, Agris, GeoRef etc. Bases like Web of Science and Russian Science Citation Index were selected because they are scientific metric bases, used to assess the work efficiency of scientists in Russia. One of the limitations of the Russian Science Citation Index is an impossibility to unload research results, hampering further analysis. The use of various databases facilitated parallel research in each database separately.

At the third stage, an original pool of scientific publications was made, using keywords for both scientific metric bases. On Web of Science and Russian Science Citation Index databases, 12251 and 18722 publications were received respectively. As shown by preliminary analysis of received publications, some articles, represented in the Web of Science, run counter to the research profile, referring to other spheres of science, such as physics, chemistry, medicine, astronomy. Selection of articles in the Russian Science

Citation Index also included articles, not in compliance with the research profile. That is why at the fourth stage all articles were checked for compliance with the research profile, canceling some of them.

The difference between databases and possibilities to perform their analysis predetermined the use of different methods and instruments. At the subsequent stage, while analyzing publications, received from the Web of Science, a freely distributed product was used CiteSpaceV (Li, Ma & Qu, 2017), making it possible to do without duplicate information.

During bibliometric analysis in the Russian Science Citation Index, a content-analysis was done of major publications. The procedure of content-analysis is to squeeze a text under review within a limited framework of certain elements, which are subsequently calculated and analyzed. Special attention is paid to the frequency of symbol use. Statistical analysis of publications vocabulary makes it possible to trace the penetration depth of new ideas and methods, which can be set by the frequency of word use, coding whole concepts. Every year between 2010 and 2016, selected were 30 most quoted publications. The search was based on names, keywords, annotations and bibliographic list by means of the information resource, capable of semantic analysis. For each period under review, based on mostly used word combinations, a semantic core was determined, outlining basic research directions of Russian scientists.

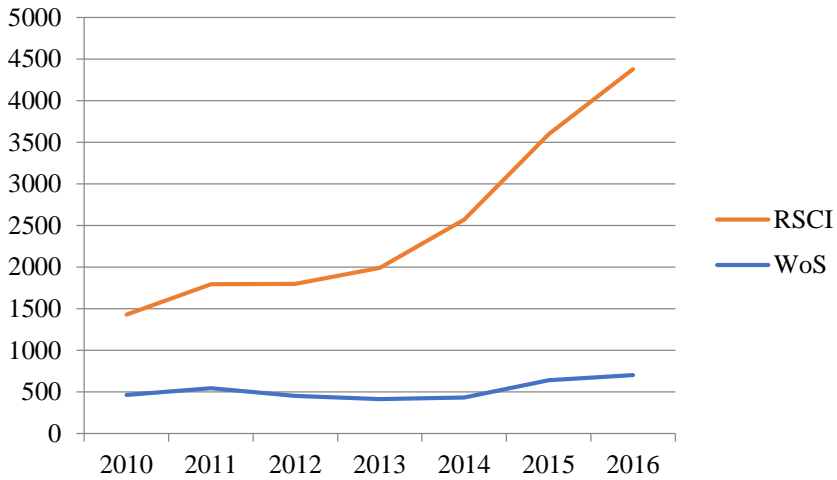
At the last stage, carried out was a comparative analysis of researches, presented in the Web of Science and Russian Science Citation Index.

The main limitation of the research made is the impossibility of comprehensive analysis of publications, presented in the Russian Science Citation Index. Still, these methods allow us to identify the main specific features of researching small and medium business development.

## **Results**

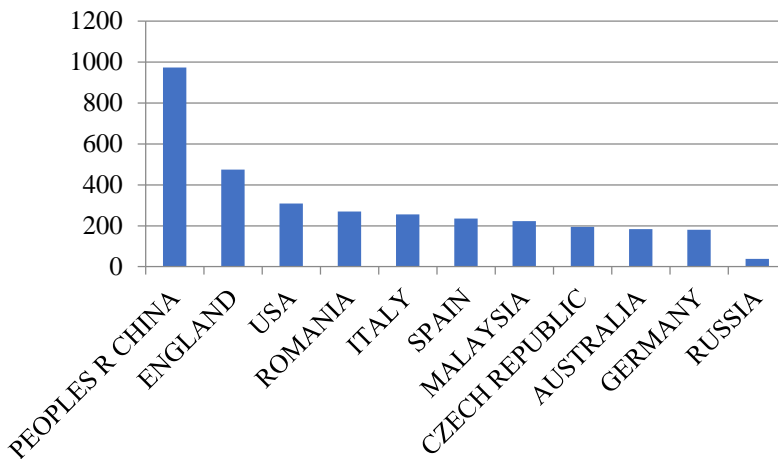
The world scientific community is paying high attention now to the problems of small and medium business development, which is confirmed by the number of publications, rising each year (figure 2).

As shown in the Figure 2, the number of publications on problems of small and medium business development, presented in the Web of Science, is on the rise. The number of publications, presented in the Russian Science Citation Index, during 2010 – 2016 is much higher than that of the Web of Science. As shown in the detailed review of Russian publications in the sphere of small business development, such significant excess is due to duplicating research results in different magazines, or due to absolutely or partially same names, which is unacceptable for leading world publishers.



**Figure 2. Dynamics of the publication activity of scientometric databases Web of Science (WoS) and Russian Science Citation Index (RSCI)**

Scientists throughout the world monitor closely problems of regional economic development (figure 3).

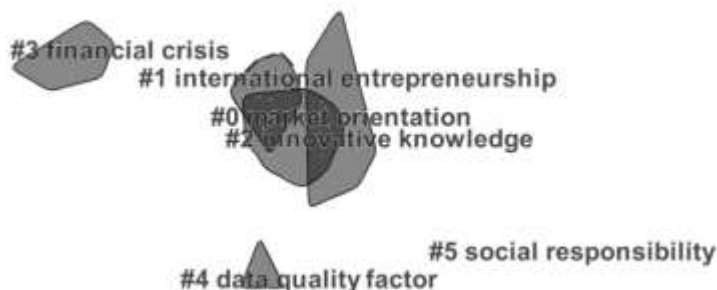


**Figure 3. Distribution of publications by country in the Web of Science**

As seen in the Figure 3, most publications are in China, around 20% of all, related to problems of small and medium business development, England accounts for about 9%, and USA – 6%, of those presented in the Web of Science. The share of Russian publications is less than 1% of the total.

To identify prospective research directions, publications, presented on the Web of Science platform, were clustered by means of CiteSpace V software.

As a result of the analysis 6 research fronts were determined (figure 4).



**Figure 4. Research fronts in the field of small and medium business development**

Analysis of publications, being a part of major identified clusters, made it possible to set out and form their main subjects. Depending upon names of publications, keyword and other information, subjects of research fronts were determined. The period of research front formation is the one, having highest intensity of quotation on the specific scientific subject. The network is divided into 6 co-citation clusters. These clusters are labeled by index terms from their own citers. The largest 2 clusters are summarized (table 1).

**Table 1. Summary of the largest 2 clusters**

Cluster ID	Size	Silhouette	Label (LLR)	Label (MI)	Mean (Citee Year)
0	19	0,746	market orientation	SME characteristics (1,51); diffusion way (1,51); relevant successful experience (1,51); exploring management perspective (1,51); geographic scope (1,51); service SME (1,51); Mexican software industry (1,36); formalizing network development (1,36); innovation capabilities (1,36); bank ownership type (1,28); social responsibility (1,28); bank financing (1,28)	1991
1	10	0,637	international entrepreneurship	SME characteristics (0,24); geographic scope (0,24); diffusion way (0,24); relevant successful experience (0,24); exploring management perspective (0,24); service SME (0,24); Mexican software industry (0,21); formalizing network development (0,21); innovation capabilities (0,21)	1995

The largest cluster (#0) has 19 members and a silhouette value of 0,746. It is labeled as market orientation by LLR, relationship by TFIDF, and SME characteristics (1,51); diffusion way (1,51); relevant successful experience (1,51); exploring management perspective (1,51); geographic scope (1,51); service SME (1,51); Mexican software industry (1,36); formalizing network development (1,36); innovation capabilities

(1,36); bank ownership type (1,28); social responsibility (1,28); bank financing (1,28); bests practice intervention (1,25); long-term outcome (1,25); pharmaceutical industry (1,22); radical change (1,22); managing knowledge asset (1,22); public credit guarantee (1,2); different institution (1,2); employee-oriented CSR (1,18);) by MI. The most active citer to the cluster is 0,26 (Aziz & Mahmood, 2011).

The second largest cluster (#1) has 10 members and a silhouette value of 0,637. It is labeled as international entrepreneurship by LLR, internationalization by TFIDF, and SME characteristics (0,24); geographic scope (0,24); diffusion way (0,24); relevant successful experience (0,24); exploring management perspective (0,24); service SME (0,24); Mexican software industry (0,21); formalizing network development (0,21); innovation capabilities (0,21); bank ownership type (0,19); social responsibility (0,19); bank financing (0,19); bests practice intervention (0,19); long-term outcome (0,19); pharmaceutical industry (0,18); radical change (0,18); managing knowledge asset (0,18); public credit guarantee (0,18); different institution (0,18); entrepreneurs management innovation intention (0,17); employee-oriented CSR (0,17); foreign subsidiaries (0,17) by MI. The most active citer to the cluster is 0,5 (Kraus, 2011).

The vital problem for Russian scientists is outlining perspective directions of research in the field of small and medium business development. Russian database in the Russian Science Citation Index is just being formed and is not capable yet of a comprehensive bibliometric analysis. Used for bibliometric analysis were methods of semantic analysis. As a result, a semantic core was determined, reflecting the main direction of research by Russian scientists in the sphere of regional economic development. Main research directions are shown in Table 2.

As shown in Table 2, most Russian researches are of general nature, aimed at the development of small and medium business, identifying problems of its development during transformation to a new for modern Russia market economy. At the same time, starting from 2013 we have been witnessing publications, related to legal protection, the labor market, Republic of Crimea, social responsibility. This is confirmed by the appearance of such keywords during research, as taxation, regional development, agriculture.

**Table 2. The semantic core of the most significant publications in Russian Science Citation Index**

Year	The semantic core of publications (the frequency of use of words and phrases in parentheses,%)
2010	Small business (2.24), governmental support (0.86), innovative entrepreneurship (0.77)
2011	Small business (1.74), governmental support (1.54), Local government (0.86), support of small business (0.82)
2012	Small business (2.59), governmental support (0.83), innovative entrepreneurship (0.83), interaction of regional enterprises (0.7)
2013	Small business (1.73), economic growth (0.87), innovative entrepreneurship (0.74), legal protection (0.62)
2014	Small business (1.70), governmental support (1.13), Siberian Federal District (1.28), innovative entrepreneurship (0.78)
2015	Small business (1.36), governmental support (1.00), the labor market (0.96)
2016	Small business (2.10), governmental support (0.88), republic of Crimea (0.88), social responsibility (0.61)

The bibliometric analysis showed that Russia is outside of scientific research of mechanisms and ways to develop small and medium business. One of the problems is the absence of feasible space of knowledge, uniting scientific schools, competence centers, scientific centers and working groups. There are no comprehensive databases on results of research in scientific publications. Most organizations, involved in scientific research, have no access to renowned foreign databases on research and development, preventing them from assessment of world scientific and technical achievements, the discovery of scientific results, which can be interesting for Russian business.

### **Conclusion and discussion**

That is why, the use of bibliometric methods is a good and convenient instrument to plan and assess scientific work, realizing scientific achievements.

As a result of the research, two main clusters were identified in the sphere of small and medium business development. Research fronts are inter-discipline clusters, incorporating publications from several adjacent fields. Research of clusters helped to determine vital subjects in this sphere and will contribute to further exploration of various issues of small and medium business development.

Results of publishing activity by Russian scientists manifest more intensive research of small and medium business in the Web of Science database. But according to the bibliometric analysis of scientific publications flow, there is a dramatic limitation in the exchange of scientific information. Poor communication between Russian scientists and their colleagues abroad causes clusterization of Russian research initiatives, slowing down the search for and identification of perspectives of Russian small and medium businesses development.

The bibliometric analysis showed that Russia is far away from scientific research fronts in the field of small and medium business development. Russian publications are more aimed at theoretical rather than practical research. A bid internal problem is the absence of feasible space of knowledge, uniting scientific schools, competence centers, scientific centers and working groups. There are no comprehensive databases on results of research in scientific publications. Most organizations, involved in scientific research, have no access to renowned foreign databases on research and development, preventing them from assessment of world scientific and technical achievements, the discovery of scientific results, which can be interesting for Russian business.

Comparison of research fronts on foreign publications with Russian subjects may form a basis of forecasting perspective research directions. But this activity requires profound research and its development may constitute an important factor in substantiating support for scientific research in Russia in the interests of small and medium business.



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