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CONTENTS

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СОДЕРЖАНИЕ

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Institutional conditions for socio-economic development in Russian regions

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ABSTRACT
The paper describes the results of quantitative analysis of institutional conditions in Russian federal districts. The research methodology relies on a set of indicators applied to evaluate the cultural, legal, business, innovation, and investment-related aspects of institutional environment. The methodological framework also includes a system of criteria (spatial and temporal), which is used to study the indicators and calculate their mean values, dynamic indicators and variability. The parameters were normalized to allow for a more accurate comparison of Russian regions. The findings are presented in the form of tables and a cluster dendrogram, which shows the distribution of Russian federal districts according to different characteristics of their institutional environment. Russian federal districts can be roughly divided into two groups: those with more or less balanced institutional conditions and those with anomalously high or low indicator values. It was found that in some regional socio-economic systems the institutional conditions were favourable for innovation and development although not all the constituent territories enjoyed equal access to these resources, which is supported by the evidence — the regional variability level was high in the corresponding indicators. The methodology and results may be used by research organizations in their analytical work; by education institutions for student training in the sphere of mass data processing; and by the relevant departments of regional and local administrations to design, adjust, and monitor strategic programs for socio-economic development. The proposed methodology, including the set of indicators used, can be adjusted and perfected for other research objectives.

KEYWORDS
institutional conditions; federal districts; average results; dynamics; variability

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Оценка институциональных условий воспроизводственного развития территорий России

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АННОТАЦИЯ
Цель работы состоит в выполнении количественного анализа сложившихся институциональных условий в федеральных округах России. Рассмотрена методологическая база изучаемой проблемы. Определены ориентиры для проведения дальнейших научных исследований. Представлен авторский перечень индикаторов по оценке уровня развития институтов на территориях, предполагающий диагностику культурных, правовых, предпринимательских, инновационных и инвестиционных факторов. Предложена система критериев для исследования показателей в пространственном и временном измерениях на основе расчета средних результатов, динамических индикаторов и вариативности. В целях корректного сопоставления ряда параметров произведено их нормирование. Использован табличный и графический методы анализа. Сформулированы выводы относительно позиций конкретных территорий по различным показателям. Приведена сводная кластерная дендрограмма, обеспечивающая разделение федеральных округов РФ по комплексу рассматриваемых условий институциональной среды. Выявлена группа территорий с достаточно сбалансированными институциональными, либо близкими к ним позициями, а также ряд федеральных округов, демонстрирующих зачастую крайние (положительные и отрицательные) результаты. Идентифицированы социально-экономические системы с благоприятными инновационно-инвестиционными возможностями, но которые не доступны для всех образующих их территорий, что подтверждает высокая межрегиональная вариативность по соответствующим индикаторам. Методы и результаты исследования могут использоваться: научно-исследовательскими организациями при подготовке аналитических отчетов; учебно-образовательными учреждениями для формирования навыков работы с информационными массивами данных; профильными департаментами территориальных администраций различного уровня при составлении, контроле и корректировке стратегических программ социально-экономического развития. Авторский подход не исключает возможности совершенствования, дополнения и адаптации под конкретные исследовательские задачи.

КЛЮЧЕВЫЕ СЛОВА
институциональные условия; федеральные округа; средние результаты; динамика; вариативность

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Introduction

The institutional environment in which companies and organizations are embedded, that is, the norms and regulations that shape and constrain their behaviour, has been a subject of active academic debate for quite a long while [1–7]. However, there is a general agreement that these "invisible" institutional forces, which are generated by the legislation and/or stem from the national culture, affect economic performance and resource efficiency on micro-, meso- and macro-levels. In studies considering formal and informal aspects of institutional environment, the focus of attention is often shifted towards quantitative and qualitative evaluation of the impact these aspects have on regional modernization. We believe, however, that the analysis of institutional environment should also include monitoring of the transformation dynamics. We also need to identify the indicators that reveal the specific problems the country faces in certain spheres and suggest ways to tackle these problems.

Theoretical framework

Institutional environment in different countries and regions can be seen from different perspectives, which may lead us to a wide range of theoretical conclusions as to what constitutes this environment and what role each constituent element plays in socio-economic development of the territory in question. In this context, much attention is usually given to the relationship between the legal, political, business, education, cultural, innovation, investment, environmental and other factors of national and regional economy.

American economist Daron Acemoglu and political scientist James A. Robinson have a clear view on this matter, which is widely discussed nowadays: according to their seminal work *Why Nations Fail*, economic prosperity, efficient performance and efficient use of resources largely depend upon the inclusiveness of economic institutions. As opposed to inclusive institutions, extractive institutions redistribute wealth to the advantage of elites, which suppresses the development of the private sector and impedes modernization. In the best-case scenario, such institutions are only capable of maintaining catch-up growth within a limited time period, which will eventually lead to a general economic decline [6, p. 12–13; [7].

According to V. L. Tambovtsev, national culture (which is sometimes considered to be equivalent to the national institutional structure) has an impact on the country's economy and its innovative development in particular. In order to formulate recommendations as to what features of national culture should be taken into account when designing and implementing innovation policy, we need comprehensive knowledge as to how these features and modernization are connected. This renders crucial a wide range of methodological considerations, starting from productive operationalization of the term "culture" and its components to accurate interpretation of the results of quantitative analysis [8, p. 84–85]. A substantial contribution was made by a group of Russian researchers, who managed to process statistical and expert data by using 24 indicators on 31 states within a 14-year period (from 2000 to 2013).

Their calculations have shown that a twenty per cent growth in indicators reflecting the development of institutional and infrastructural environment (according to the ranking scale) makes it possible to increase investment efficiency 2–2.5 times. Thus, favourable environment "funds science without spending a dime of public money", that is, it is much more efficient than 'money injections' from the state budget. On the other hand, some countries (including Russia, Poland, Turkey, and Slovakia) face the situation when the state fails to develop the spheres of research and innovation as the allocated funds simply do not bring about any progress and the result is zero growth [9, p. 77–83].

There are several econometric models to support the hypothesis that institutional factors affect business activity in Russian regions, such as, for example, the model developed by the RANEPA research team. The quantitative evidence they have obtained shows the following:

1) business activity tends to be lower in regions with higher social, environmental, financial and other investment risks;

2) in regions where the legal environment is unfavourable (money laundering, tax evasion, debt evasion, illegal business practices), business activity rates are also lower;

3) in regions with developed banking systems and higher availability of funding for businesses and start-ups (business grants, loan schemes and so on), business activity is generally higher [10, p. 103–112].

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Research methodology

In order to evaluate institutional conditions in specific regions, we are going to use a set of indicators that characterize their institutional environment, which is either conducive to productive entrepreneurship and economic growth or not.

The set of indicators to be considered in this study includes the following:

1) the cultural component (hereinafter referred to as "culture"), that is, the number of theatre-goers per 1,000 residents;

2) the crime rate, that is, the number of registered crimes per 100,000 residents;

3) the small business turnover (hereinafter "small business") per capita (million roubles per capita);

4) the volume of innovative products (hereinafter "innovation"), that is, the number of innovative products and services in monetary terms per capita (thousand roubles per capita);

5) the volume of investment (hereinafter "investment") or the amount of fixed capital investment per capita (roubles per capita).

It should be noted that the above-described indicators are relative, which makes our calculations more objective and our comparisons more accurate. Thus, we will be able to distinguish between the regions which demonstrate the results that can be considered as "average" and those that have "anomalous" results in absolute terms.

Our analysis covers all Russian federal districts and relies on the official data for an 8-year period (2010–2017) published in Rosstat's statistical yearbooks *Regions of Russia. Socio-Economic Indicators* and *Small and Medium-Sized Businesses in Russia*[1].

For each of the indicators (i) we need to identify the spatial characteristics of specific federal districts (j) and the dynamic changes that occurred in these districts. To do this, we are going to apply the following criteria:

a) mean value (result) $\overline{Ins_{i,\,j}}$ in the form of a simple arithmetic mean within the given period of time;

b) dynamic indicator D_{ij}, which can be calculated as the ratio of the mean absolute difference of values to the arithmetic mean of the data sample in the j^{th} territory for the given time period (1a):

$$D_{iJ} = \frac{\overline{\partial}_{i,J}}{\overline{Ins_{i,\,j}}} \cdot 100\%, \qquad (1a)$$

where $\overline{\partial}_{i,J}$ is the mean absolute difference of indicators, which should be assessed the following way (1b):

$$\overline{\partial}_{i,\,J} = \sum \frac{Ins_{i,\,j,\,t} - Ins_{i,\,j,\,t-1}}{n-1}, \qquad (1b)$$

where $t = 1 \ldots n$ are the time periods (years).

We assessed the dynamics of institutional environment D by looking at the changes in the indicator values (i) against the mean values for the given territories (j). A positive and comparatively high value in this or that criterion (as compared to other socio-economic systems) is interpreted as a sign of accelerated development [11, p. 71].

c) regional variability of results [12, p. 43–44] v_{ij} in the reporting period (2017) (Formula (2)):

$$v_{ij} = \frac{s_{ij}}{\overline{Ins_{i,\,j}}},$$

where s_{ij} is the mean-square deviation of the indicators (i) characterizing the institutional environment in the constituent territories of the j^{th} federal district.

The indicator set comprises three groups of indicators which we will use to analyze institutional environment in different Russian regions.

Results

Considering the *mean values* of the socio-economic development indicators we have chosen for our analysis, it should be noted that all the final values, despite their relative character, are measured in different units. Therefore, for an accurate comparison, we need to normalize the parameters by comparing the normalized values with the actual values and reference values. The above-described algorithm is also applied in the cases when an increase in a certain indicator (*1*, *3–5*) will signify an improvement of the situation. In the opposite case (criterion *2* — crime rate) we are going to calculate the ratio of the minimal result to each of the actual values in the sample of federal districts (Table 1).

The optimal values in Table 1 are given in bold italics. As we can see from the table, none of the Russian federal districts is ahead of the others in more than one of the given parameters. For instance, while the North-Western Federal

[1] *Regions of Russia. Socio-Economic Indicators. 2018*. Moscow: Rosstat, 2018; *Regions of Russia. Socio-Economic Indicators. 2017*. Moscow: Rosstat, 2017; *Regions of Russia. Socio-Economic Indicators. 2015*. Moscow: Rosstat, 2015; *Regions of Russia. Socio-Economic Indicators. 2013*. Moscow: Rosstat, 2013; *Small and Medium-Sized Businesses in Russia. 2012*. Moscow: Rosstat, 2012.

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District has managed to maintain its cultural traditions with the average result of 352.88 (the number of theatre-goers per 1,000 residents), the North-Caucasian Federal District has the lowest crime rate — 757.75 (the number of crimes per 100,000 residents). At the same time this region lags behind in all the other parameters.

Normalized values characterizing institutional environment in Russian districts is illustrated by the following radar chart (see Figure 1).

Furthermore, it should be emphasized that indicators *1* and *3*, corresponding to cultural and business activity, are closely connected, which is shown by the correlation coefficient $r = 0.867$.

If we look at the general dynamics of the institutional structure in Russian regions, we can see that the Central Federal District is the most prosperous as it has the highest values in small business development (16.35%) and investment (8.83%) (Table 2).

Table 1

Actual mean values (AMV) and normalized mean values (NMV) of indicators characterizing institutional environment in Russian federal districts, 2010–2017

Federal district	Culture		Crime		Small business		Innovation		Investment	
	AMV	NMV	AMV	NMV	AMV	NMV	AMV	NMV	AMV	NMV
Central	306.63	0.87	1379.50	0.55	**0.31**	**1.00**	23.32	0.68	83496.25	0.46
North-Western	**352.88**	**1.00**	1523.50	0.50	0.28	0.89	19.62	0.57	107222.50	0.59
Southern	145.00	0.41	1355.88	0.56	0.15	0.49	6.26	0.18	82692.38	0.45
North-Caucasian	107.88	0.31	**757.75**	**1.00**	0.07	0.23	2.89	0.08	45095.00	0.25
Volga	233.50	0.66	1503.25	0.50	0.17	0.54	31.92	0.93	72108.38	0.40
Ural	224.13	0.64	1885.75	0.40	0.21	0.68	15.10	0.44	**181935.38**	**1.00**
Siberian	255.75	0.72	2106.38	0.36	0.16	0.52	6.89	0.20	70828.75	0.39
Far Eastern	208.00	0.59	2081.00	0.36	0.21	0.67	**34.34**	**1.00**	152417.38	0.84

Calculated on the basis of Rosstat data.

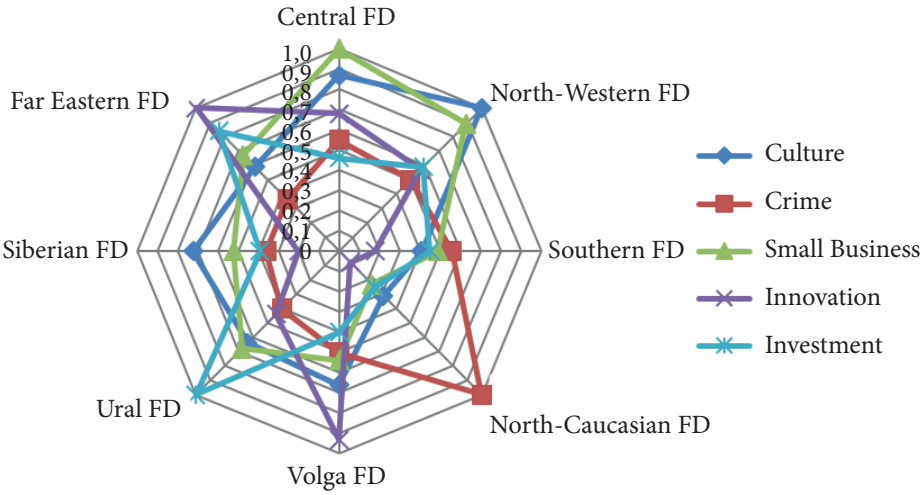

Figure 1. *Normalized mean values of the institutional environment indicators in Russian federal districts, 2010–2017 (compiled on the basis of the data shown in Table 1)*

Table 2

Dynamics of institutional environment indicators in federal districts of Russia, 2010–2017, %

Federal district	Culture	Crime	Small business	Innovation	Investment
Central	5.40	–4.01	**16.35**	23.76	**8.83**
North-Western	–4.62	–3.34	12.19	13.30	6.81
Southern	–35.07	–1.90	12.87	**31.72**	3.36
North-Caucasian	**16.95**	–1.62	12.65	15.20	5.72
Volga	10.22	–4.99	10.49	15.82	6.64
Ural	5.35	**–5.57**	10.23	19.59	8.56
Siberian	2.23	–3.32	10.01	19.01	5.63
Far Eastern	–3.37	–2.73	13.41	4.39	6.77

Calculated on the basis of Rosstat data.

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Table 3

Indices of regional variability in institutional conditions
Federal districts of Russia, 2017

Federal district	Culture	Crime	Small business	Innovation	Investment
Central	0,53	0,21	0,72	0,84	0,43
North-Western	0,93	0,21	0,71	1,37	2,36
Southern	0,54	**0,17**	0,55	1,04	0,40
North-Caucasian	0,32	0,48	0,76	2,46	**0,26**
Volga	**0,30**	0,20	**0,26**	**0,75**	0,45
Ural	0,60	0,19	0,37	1,44	1,58
Siberian	0,35	0,28	0,64	0,89	0,50
Far Eastern	0,56	0,19	0,44	1,42	0,78

Calculated on the basis of Rosstat data.

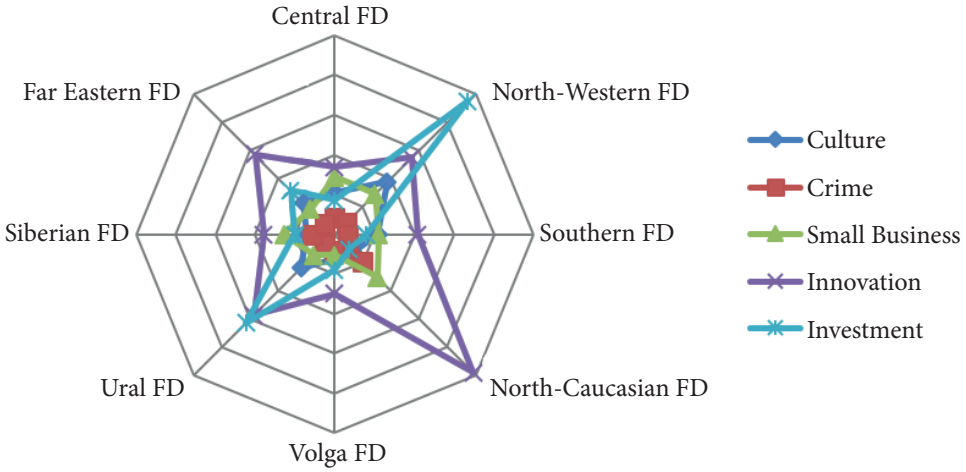

Figure 2. *Regional variability of institutional conditions in Russian federal districts, 2017 (compiled on the basis of the data shown in Table 2)*

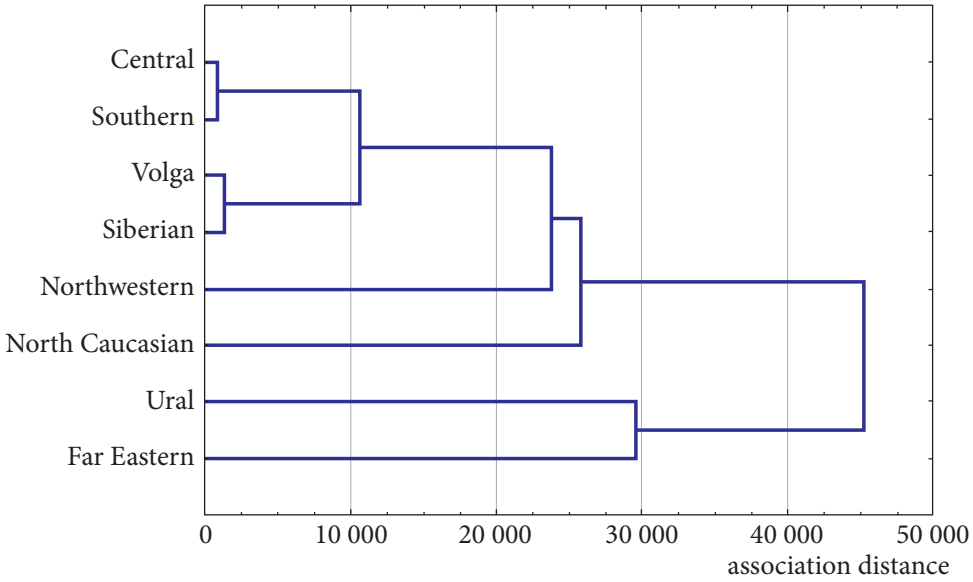

Figure 3. *Cluster dendrogram of Russian federal districts according to the institutional environment indicators. We applied single linkage clustering and the Euclidean distance measure (compiled on the basis of the data from Tables 1–3)*

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The dynamic component constituting the crime rate (*2*) should be interpreted by comparing it with the optimal value that corresponds to the maximum crime reduction obtainable on the territory. Therefore, the reference value for this factor is the one reached by the Ural Federal District (–5.57%).

Our calculations of regional variability in 2017 have demonstrated that the Volga Federal District has the most balanced situation of all, considering the indicator values of its constituent territories: it has demonstrated optimal results in three categories: culture (*1*), 0.3; small business (*3*), 0.26; and innovation (*4*), 0.75 (Table 3). At the same time, the North Caucasian and North-Western federal districts are lagging behind and have the worst regional imbalance.

As Figure 2 illustrates, the biggest discrepancy lies in the sphere of innovation and investment, which can obviously be detrimental to the development of the small business sector in federal districts.

Figure 3 shows a comprehensive cluster dendrogram of the positions occupied by Russian regions according to the institutional environment indicators.

As Figure 3 shows, the Central, Southern, Volga, and Siberian federal districts enjoy a quite balanced institutional environment. Such federal districts as Northern-Caucasian and North-Western, however, represent a somewhat contradictory picture, combining extreme results, both positive and negative.

The Ural and Far Eastern federal districts have socio-economic systems that are generally favourable for innovation and investment, although not all of their constituent territories enjoy equal access to these resources, which can be seen from the high level of regional variability in the corresponding indicators.

Conclusion

Our study has shown that there is a high degree of regional variability between different Russian territories and federal districts, each of them having their own individual institutional trajectories. This conclusion is supported by our calculations of the mean and dynamic indicator values and variability coefficients, which show a 2–10 times difference for the factors in question. We found that none of the federal districts seems to be an absolute leader in terms of its socio-economic performance. Moreover, we identified districts which simultaneously demonstrate both the best and the worst results in different parameters characterizing their institutional environment.

Nevertheless, the most balanced situation is in Central, Southern, Volga, and Siberian federal districts, which is supported by the evidence shown in Tables 1–3 and in Figure 3.

Two federal districts — the Ural and Far Eastern — should be considered separately as they generally demonstrate quite high innovation and investment-related indicator values but also have considerable regional variability, which impedes modernization in these regions and in the country as a whole.

Sluggish socio-economic development in the country, especially in the sphere of science, innovation and business, makes it necessary for the academic community to consider a range of factors, which, apart from purely economic reasons, should include institutional conditions and psychological factors leading to the country's unsatisfactory economic performance. These problems are described in detail by N. I. Komkov, who believes that the main reasons for slow decision-making and failure to ensure innovation and modernization in the manufacturing sector are as follows: the personnel of enterprises are not interested in modernization and are enjoying local benefits from adhering to old technologies. Moreover, both the management and the staff of industrial enterprises are aware of the fact that a full or partial suspension of production or service operations necessary to modernize the production facilities would inevitably entail a loss of profit or maybe a loss of the market, too. This may also mean redundancies and other negative consequences. The management of industrial enterprises may also harbour doubts about the potential and efficiency of the new technologies [13, p. 14].

V. M. Polterovich points out that in order to break out of the stagnation trap, the country should address institutional macro-level problems by countering corruption, reducing shadow economy, lifting the administrative barriers, ensuring greater business transparency, protecting private property rights and so on. These goals are, in his opinion, worthy of the effort. The results of such effort, however, are heavily dependent on mass culture and informal norms in the country. In Russia, the latter currently impede any modernization attempts. Meanwhile, coercion and

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control used to enforce the necessary reforms often prove to be cost-inefficient [14, p. 96].

G. G. Malinetsky believes that it is necessary to make the public and state authorities more motivated to support innovation, which will inevitably lead to the transformation of those institutions that could foster and enhance innovation in the country. According to Malinetsky, to ensure technological development, we need to establish an innovation-friendly environment and make the economy more sensitive to innovation. This can be accomplished by stimulating a constant flow of ideas, projects, inventions and plans that would at least match the Soviet level (which was 10 times higher than the current level) and enhance scientific, technological, marketing and other expertise. This would reduce investment risk (including the risks faced by the state as an investor), bringing it to an acceptable level. For instance, in Silicon Valley, on average, only 7 projects out of 1,000 are sponsored by venture funds. Russia, however, has a different socio-economic environment characterized by low demand, money shortages, and the lack of lending support for innovative businesses [15, p. 27].

The above-described methods and results can be further used by research organizations in their analytical work; by education institutions for student training in the sphere of mass data processing; and by the relevant departments of regional and local administrations to design, adjust, and monitor strategic programs for socio-economic development. The proposed methodology, including the set of indicators used, can be adjusted and perfected for other research objectives.

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Strategic priorities of cooperation between Heilongjiang province and Russia

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ABSTRACT
During the five-year period of implementation of the Belt and Road Initiative, Heilongjiang Province, which is one of the nine Chinese border provinces, has actively responded to the national development policy and achieved some impressive results in its strategic cooperation with the Russian Far East. The article characterizes the current state of Heilongjiang Province's relationship with Russia and describes its strategic plans for findings new paths of cooperation as a result of the province's integration into the Belt and Road Initiative and participation in China-Mongolia-Russia Economic Corridor construction. The key projects crucial for the province's development are the Eastern Land-Sea Silk Road Economic Belt (hereinafter referred to as the Eastern Silk Road Belt) and the Heilongjiang Land-Sea Silk Road Economic Belt (hereinafter referred to as Longjiang Silk Road Belt). Both projects are aimed at increasing the interconnectedness between regions and countries, promoting international trade and fostering understanding and tolerance. The article describes the background, objectives, results and problems associated with these projects in Heilongjiang Province and their role in ensuring further socio-economic development of the territory. Finally, recommendations are given concerning the main areas of cooperation between the province and Russia: these include modernization of trade (e-commerce), fostering cooperation in the industrial sphere and agriculture, and opening a free cross-border trade zone.

KEYWORDS
Belt and Road Initiative; Heilongjiang Province; Eastern Silk Road Belt; Longjiang Silk Road Belt; strategic planning; cooperation

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Стратегические приоритеты сотрудничества между провинцией Хэйлунцзян и Россией

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АННОТАЦИЯ
В течение пятилетнего периода реализации инициативы «Один пояс, один путь» провинция Хэйлунцзян, которая является одной из девяти приграничных провинций Китая, активно реагировала на политику национального развития и достигла некоторых значительных результатов в своем стратегическом сотрудничестве с российским Дальним Востоком. В статье дается характеристика нынешнего состояния отношений провинции Хэйлунцзян с Россией и описываются ее стратегические планы по поиску новых путей сотрудничества в рамках участия в инициативе «Один пояс, один путь». Также описано участие провинции в строительстве экономического коридора Китай-Монголия-Россия. Ключевыми проектами, имеющими значение для развития провинции, являются Экономический пояс Восточно-Шелкового пути (в дальнейшем именуемый «Восточный шелковый путь») и Экономический пояс Хайлунцзян-Шелковый путь («Лунцзянский пояс Шелкового пути»). Оба проекта направлены на улучшение связей между регионами и странами, развитие международной торговли, взаимопонимания и терпимости. В статье описываются предпосылки, цели, результаты и проблемы, связанные с этими проектами в провинции Хэйлунцзян, и их роль в обеспечении дальнейшего социально-экономического развития территории. Также в статье даны рекомендации по основным направлениям сотрудничества между провинцией Хэйлунцзян и Россией: они включают модернизацию торговли (электронная коммерция), развитие сотрудничества в промышленной сфере и сельском хозяйстве, а также открытие зоны свободной трансграничной торговли.

КЛЮЧЕВЫЕ СЛОВА
Belt and Road Initiative; Heilongjiang Province; Eastern Silk Road Belt; Longjiang Silk Road Belt; strategic planning; cooperation

БЛАГОДАРНОСТИ
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Introduction

The Silk Road has been an important trade channel, which strengthened the political, economic and cultural ties between the East and the West. In the autumn of 2013, Chinese national leader Xi Jinping presented to the world a picture of "shared responsibility for the world and promoted global development", which was the vision of a joint project aimed at building the Silk Road Economic Belt and the 21st Century Maritime Silk Road. The project is expected to help China open up to the West, build up its maritime power, promote tolerance and find new ways of developing peaceful, mutually beneficial cooperation.

Heilongjiang Province is one of China's nine border provinces, it shares 2,981 km of its border with Russia and has 25 first-class national ports. The province enjoys a long history of cooperation with Russia, especially in the sphere of border trade. Currently cooperation also encompasses such spheres as agriculture, forestry, mineral resources, energy, tourism, science and technology, and culture. In the past five years, Heilongjiang Province joined the national Belt and Road strategy; participated in the construction of China-Mongolia-Russia Economic Corridor; and actively implemented the comprehensive strategy of cooperation with Russia and the Russian Far East [1].

The structural framework of the paper consists of three parts. The first part describes the current situation of cooperation between Heilongjiang Province and Russia. The second part covers the construction of the Eastern Silk Road Belt, which is connected with the Belt and Road Initiative and is expected to improve the province's economic and geopolitical situation [2]. The third part deals with another major project – the Longjiang Silk Road Belt.

Heilongjiang Province strives to integrate its strategy into national strategic plans and focuses on joining the Belt and Road Initiative, the provincial Five Major Plans and the 13th Five-Year Plan [3]. The strategic priorities of Heilongjiang Province in its cooperation with Russia are related to the construction of China-Mongolia-Russia Economic Corridor and other aspects, such as cooperation in the sphere of infrastructure, energy and resources, trade, cultural exchanges and so on [4]. The province has established a new pattern of cooperation with its northern partner in line with the goals outlined by General Secretary XI JinPing in his speech made in Heilongjiang Province at the Belt and Road Forum for International Cooperation [5–8].

Cooperation between Russia and Heilongjiang Province: current state

The following table describes the changes in the total volume and growth rate of imports and exports from Heilongjiang Province to and from Russia between 2008 and 2018. The growth rate of import and export trade between Heilongjiang Province and Russia is relatively large and is growing steadily. Since 2007, Heilongjiang Province became China's first province to reach the level of US$100 million in trade with Russia. In 2009, however, due to the financial crisis, the bilateral trade volume fell sharply. In 2011, the trade between the province and Russia started to grow again due to the operation of the Sino-Russian crude oil pipeline. In recent years, China has been one of Russia's key trading partners and the trade liberalization policy greatly facilitated and enhanced cooperation in this sphere. By mid-December 2018, Sino-Russian trade volume had exceeded 100 billion US dollars, which is a record high[1]. As Table 1 illustrates, in 2018, the trade between the province and Russia was flourishing [9].

If we look at the indicators in the table above, it can be seen that in the past decade trade has been fluctuating, mainly due to the lower world energy prices. Therefore, Heilongjiang Province and Russia should come to an agreement about the new paths of cooperation that would be in line with the goals of strategic development of the two sides. The 70th anniversary of the establishment of China-Russia diplomatic relations is to be celebrated in 2019. China-Russia bilateral economic and trade relations should take this opportunity to move to a new, higher level. It should be noted that the 2018–2019 Sino-Russian Local Cooperation and Exchange Year has also brought new opportunities for both countries. Zhang Qingwei, the Chinese chairman of the China-Russia Friendship, Peace and Development Committee, said that Heilongjiang Province would work with Russia to enhance local cooperation. Therefore, Heilongjiang Province should benefit from this opportunity to improve its relationship with Russia in various fields and to meet the strategic goals of Sino-Russian economic and trade cooperation at "the northernmost point".

[1] Retrieved from http://www.sohu.com/a/288059706_123753

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Table 1

Statistics on the import and export of merchandise trade between Russia and Heilongjiang Province in 2008–2018, in million US dollars

Year	Total Volume	Year-over-year growth, %	Export volume	Year-over-year growth, %	Import Volume	Year-over-year growth, %	Share in the province's import and export, %	Share in China's import and export, %
2008	110.6	3.1	79.7	–2.5	30.9	20.9	48.3	19.5
2009	55.8	–49.6	32.7	–59.0	23.1	–25.4	34.4	14.4
2010	74.7	34.0	42.8	31.1	31.9	38.1	29.3	13.5
2011	189.9	154.0	43.5	1.5	146.4	360.0	49.3	24.0
2012	213.1	12.2	51.6	18.6	161.5	10.4	56.3	24.2
2013	223.6	5.8	69.1	34.0	154.5	–3.3	57.1	21.8
2014	232.6	4.1	89.3	29.2	143.5	–7.1	56.9	18.9
2015	108.5	–53.4	20.8	–76.7	87.7	–38.9	51.7	15.9
2016	91.9	–15.3	17.0	–27.7	74.9	–11.9	55.6	13.2
2017	110.9	22.5	16.3	–2.6	94.6	28.2	58.1	13.1
2018	181.9	64.7	11.2	–29.5	170.7	80.4	69.8	17.3

Source: [10; 11] and http://www.customs.gov.cn/tabid/2433/InfoID/877451/frtid/49629/settingmoduleid/126763/Default.aspx; http://bbs1.people.com.cn/post/129/1/2/170867642.html

Eastern Silk Road Belt

The main objectives pursued by the Eastern Silk Road Belt project were to build a cross-border transportation system for the Harbin-Russia-Europe Railway, to increase the interconnectedness of the infrastructure, to construct the supporting service facilities, to increase energy resource cooperation, and to accelerate the construction of cross-border industrial parks and industrial chains [12]. This, in turn, was expected to attract domestic and foreign industries to the region.

The project was implemented in 2014, and the province pursued its "opening-up" strategy: its total investment in Russian economy reached 1 billion US dollars, increasing by 20% in comparison with the previous period. Cooperation also involved the banking sphere: 10 commercial banks of the province established relationships with 24 commercial banks in Russia. The Harbin International Economic and Trade Fair was successfully upgraded to the "China-Russia Expo". The volume of the trade contracts signed at the first Expo amounted to 3.15 billion US dollars; 260 economic cooperation agreements were signed, involving 68.3 billion yuans. Harbin City was positioned as a center for cooperation with Russia[2]. 13 port areas were opened for cross-border tourism and the number of the border-crossing points issuing visas was increased to eight. The preliminary work of the Sino-Russian crude oil pipeline II and Sino-Russian east-line natural gas pipelines was progressing smoothly. The Amur-Heihe border oil storage and transportation and refining and chemical complex project had been approved, and the Longxing Group and LongMay Group had started construction of six projects in Russia. The construction of the first cross-border Tongjiang Railway Bridge between China and Russia and the preliminary work on the Heihe Cross-Border Highway Bridge also advanced smoothly. The Harbin Airport opened three new routes to Russia. China-Europe trains that traveled directly to Warsaw, Poland, on average had 1.3 trains a day, with the entire journey lasting 13 days. The goods that were originally shipped to the Pearl River Delta via Dalian Port were now transported by rail to Vladivostok, saving nearly one week and reducing the costs by about 20%. The volume of mixed passenger and cargo routes accounted for 40% of the total export volume of Russian e-commerce parcels. The actual utilization of foreign capital in the province exceeded 5 billion US dollars, with an increase by 11.1% [13].

As we said above, the construction of the Eastern Silk Road Belt is a part of the larger national Belt and Road Initiative. Within this project, Heilongjiang Province has built a new platform for undertaking domestic and foreign industrial transfer and constructed an export-oriented industrial system.

[2] Retrieved from http://finance.sina.com.cn/china/20150129/095521426781.shtml

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Longjiang Silk Road Belt

In December 2014, the Economic Conference of Heilongjiang Provincial Party Committee clearly stated for the first time its intention to accelerate the construction of Longjiang Silk Road Belt connected to China-Mongolia-Russia Economic Corridor. Harbin is the centre of Longjiang Silk Road Belt, then the Belt goes eastwards via Suifenhe to Russia's Far East port of Vladivostok, which has transport connections with Japan, South Korea, and North Korea. In the southern direction, the Belt connects the province with East China and South China through the port of Dalian and then with the Bohai Sea, Yangtze River Delta and Pearl River Delta. In the west, the Belt is connected to Russia's city Chita and the Eurasian Continental Bridge via Manchuria. In the north, there is connection with the Russian Siberian Railway via Heihe and Mohe; the first two lines are connected to the Maritime Silk Road, and the latter two echo the Silk Road on the land (see Table 2).

Thus, Longjiang Silk Road Belt is aimed at building the most convenient and smooth international channel connecting Asia and Europe to boost export-oriented economy and enhance regional connectivity [14]. This way, Heilongjiang Province has the potential to attract new production enterprises, enhance its domestic and international industrial cooperation and thus create a new growth pole for the regional economy [15; 16] (Table 3).

Since 2015, the Belt and Road Initiative, transcending time and space, has led Longjiang Province to actively plan to become a core area in the construction of the Longjiang Silk Road Belt of China-Mongolia-Russia Economic Corridor. The Longjiang Silk Road Belt follows the concept of "West to Europe, East to the Sea": cargo and passenger trains should be going straight to the hinterland of Europe, and the key role in creating the necessary channels would be played by the Harbin-Suifenhe-Russia land-sea transport channels.

Table 2

Channel infrastructure layout

Channel	Layout
Land and Sea Transport	– by sea (ports): China's Guangzhou-Ningbo-Shanghai-South Korea's Busan-Japan's Niigata-Russian Far East's Vladivostok-Nakhodka-Dongfang; – on land (railways): Suifenhe-Manchuria- Baikal-the Russian Siberian Railway and west to the Baltic coast and the ports of Hamburg and Rotterdam
Railway Transport	Four main railway lines: – Dalian Port-Tongjiang-the Russian Siberian Railway and Bea Railway; – Russia Vladivostok's ports-Suifenhe – Manchuria-Russia's Siberian Railway connected to the Hamburg and Rotterdam ports; – Blabovichsk-the Siberian Railway and the Bea Railway; – Laoheishan-Dongning-Suifenhe-Hulin-Raohe-Fuyuan-Tongjiang-Mingshan-Xunke-Heihe-Mohe and other ports – the Siberian Railway and Bea Railway
Highway Transport	– local expressways in the Harbin metropolitan area; – Suihua-Daqing, Harbin-Wuyuan, Shuangyashan-Baoqing, etc. – first-class and second-class highways along the border roads (Mohe-Dongning); – the boundary river bridges (Heihe-Dongning-Luogu River)
Water Transport	– Harbin Port and Jiamusi Port (hub); – Heihe, Fuyuan and other ports (nodes); – Tongjiang Port-Russia's Khabarovsk-Gongqingcheng-the Strait through the Heilongjiang River; – Fuyuan Port-Qianfu Railway-the Yujita Gangyuan Economic Zon-Yujita Deepwater Port Area
Aviation Transport	– Harbin Taiping International Airport as the hub (China-Russia-Central Europe-North America); – regional airports as the nodes (Qiqihar, Mudanjiang, Jiamusi, Heihe, Mohe, Fuyuan and others); – Sino-Russian cargo charter flights (Harbin Airport- Russia's Yekaterinburg Airport)
Pipeline Transport	– Sino-Russian Mohe-Daqing oil transport pipeline; – the Sino-Russian eastern natural gas transport pipeline from the Heihe River; – the second-line project of Sino-Russian crude oil pipeline; – the Mohe-Daqing double line; – the Sino-Russian East Line natural gas pipeline project
Grid Transmission	– the cross-border international transmission line in Heihe, the Sino-Russian border and the transmission line of Harbin-Tangshan
Cable Communication	– the International Communication Gateway Bureau in Harbin; – the Arctic Circle Europe-Asian optical cable communication backbone network (Russia's Murmansk-along the Arctic Ocean-through the Bering Strait from Vladivostok-via the Suifenhe River and Harbin)

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Table 3

Industrial layout planning

Industrial layout	Specific planning
One core	Harbin as the core hub performs the following functions: – a Sino-Russian economic and trade cooperation platform, a cooperative enterprise headquarters, a logistics hub, manufacturing bases, information finance services, cultural science and technology exchange centers
Four belts	Four industrial belts with advanced technologies, distinctive characteristics and strong competitive advantages: – Harbin-Daqing-Qiqihaer-Manchuria; – Harbin-Mudanjiang-Suifenhe-Dongning; – Harbin-Jiamusi-Suifenhe-Dongning; – Harbin-Suifenhe-Beian-Heihe
One ring	The ring is aimed at development of export-oriented economy with the border towns as nodes (Mohe, Sunwu, Xunke, Jiayin, Luobei, Tongjiang, Fuyuan, Raohe, Hulin and Mishan)
Domestic and cross-border cooperation	– overseas industrial parks; – cooperation between the provincial enterprises and the foreign-funded enterprises; – six cross-border industrial clusters

Recently, Heilongjiang Province has become increasingly prominent as a core hub for trade and exchange between countries in Northeast Asia. The Harbin Comprehensive Bonded Zone was officially launched and the railway container center station was put into use. Harbin Airport's dominance of Russian e-commerce cargo has been established, and Wudalianchi Airport and Jiansanjiang Airport have been opened successively. The China-Russia Expo attracts guests from nearly 100 countries and regions. The construction of the Sino-Russian Tongjiang Railway Bridge project, the construction of the Sino-Russian Heihe Highway Bridge, and the construction of the Bear Island Highway Passenger Port have been actively promoted. The Harbin-Mudanjiang and Harbin-Jiamusi Express Railways are about to be completed. The second-line project of the Sino-Russian crude oil pipeline was approved by the National Development and Reform Commission, and the Sino-Russian East-line natural gas pipeline Heihe domestic control project was implemented by more than a half.

Following the successful realization of the two above-described projects, in April 2017, Heilongjiang Province proposed another project – "One Window and Four Districts", which is aimed at opening yet another window between China and the North and includes construction of the Sino-Russian Free Trade Area [17].

Conclusion

The Belt and Road Initiative is a major strategic decision made by the Party's Central Committee and the State Council to meet global challenges, to create a new pattern of China's opening-up to the West, and to promote world peace and development. In the past five years, Heilongjiang Province has joined the national Belt and Road project and participated in the construction of China-Mongolia-Russia Economic Corridor. The main strategic priorities pursued by the province's government are to boost the connectivity of infrastructure, finance, trade, and people and to foster industrial cross-border cooperation.

After a dramatic decline in trade with Russia in 2016, the situation has started to improve in the following years as both sides were actively cooperating in the spheres of channel construction and cargo transportation, although the problems inherent in the cooperation with Russia have not been fully resolved yet. We believe that the following measures would contribute to further development of economic and trade cooperation between the province and Russia [18]: modernization of trade, that is, building a cross-border e-commerce base; fostering cooperation in the industrial sphere by building a cross-border industrial base; using the Belt and Road Initiative to connect with the Eurasian Economic Union for large-scale cooperation; using the advantages of agricultural resources in the Russian Far East to create a green food processing base; and, finally, using the opportunity of the Russian Far East Development Strategy to launch negotiations about establishing a Sino-Russian free trade zone.

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Prospects of development of the transnational transport corridor of the northern sea route based on Sabetta sea port

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ABSTRACT
The Northern Sea Route (NSR) and the opportunities it offers for international transportation networks is widely discussed not only in academic literature but also by the wider public. The purpose of this article is to analyze the economic and logistical prerequisites for the development of the NSR-based project, its opportunities and threats in the light of Russia's regional development. The article also focuses on the potential of the sea port of Sabetta, which may be turned into a transnational transport hub. The possibility of development of intermodal terminals is also discussed. The project presented in this article is based on the multimodal transport approach. The methodological framework relies on the method of branches, arbitrary variation in network programming, and graphical modelling. The analysis has shown that in its current state, the transportation network is insufficient and requires further expansion and modernization. The authors conclude that the capacities of Sabetta need to be supplemented with a modern network of railway, river and motor transport. This project may be expected to become a driver for regional development of the Urals and Siberia, create new jobs and attract foreign investment. The results of the study can be used for strategic planning of regional development of Russia's northern regions.

KEYWORDS
transnational transport corridor (TNC); transnational transport system; transport corridor; Arctic; Northern Sea Route (NSR), Sabetta sea port

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Перспективы развития северного морского пути на базе морского порта Сабетта

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АННОТАЦИЯ
Северный морской путь (СМП) и его возможности для развития международных транспортных сетей широко обсуждаются не только в научной литературе, но и среди широкой общественности. Целью данной статьи является анализ экономических и логистических предпосылок для развития проекта, основанного на СМП, его возможностей и угроз в свете

КЛЮЧЕВЫЕ СЛОВА
международный транспортный коридор (МТК); международные транспортно-логистические системы; транспортный коридор; Арктика; Северный морской путь; Сабетта

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регионального развития России. В статье также рассматривается потенциал морского порта Сабетта, который может быть превращен в транснациональный транспортный узел. Также обсуждается возможность развития интермодальных терминалов. Проект, представленный в этой статье, основан на мультимодальном транспортном подходе. Методологическая основа опирается на метод ветвей и графическое моделирование. Анализ показал, что в своем нынешнем состоянии транспортная сеть недостаточна и требует дальнейшего расширения и модернизации. Авторы приходят к выводу, что возможности Сабетты необходимо дополнить современной сетью железнодорожного, речного и автомобильного транспорта. Можно ожидать, что этот проект станет драйвером регионального развития Урала и Сибири, создания новых рабочих мест и привлечения иностранных инвестиций. Результаты исследования могут быть использованы для стратегического планирования регионального развития северных регионов России.

БЛАГОДАРНОСТИ
Работы выполняются на основании задания на выполнение государственных договорных работ в области научной деятельности в составе базовой части государственного задания Министерства образования и науки Российской Федерации для Уральского государственного лесотехнического университета (№ 26.8660.2017/8.9 «Методология исследования форм экономической и технологической реальности в аспекте устойчивого лесопользования»). Также было выполнено задание на выполнение государственной договорной работы в области научной деятельности в составе базовой части государственного задания Министерства образования и науки Российской Федерации в Пермский национальный исследовательский политехнический университет (тема № 26.6884.2017/8.9 «Устойчивое развитие городских территорий и улучшение среды обитания человека»).

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Introduction

Efficient use of oceanic space is a complex problem, which cannot be addressed without a clear regulatory framework and state support.

For Russia, opening a new international transportation corridor via the Northern Sea Route (NSR) and the port of Sabetta (see Figure 1) presents a number of challenges, such as the lack of material resources (for example, food and construction materials) or the lack of transport connectivity in its northern regions. There is also a lack of developed internal water transport in the Urals and Siberia. Yet another problem is the low level of export and import activity in the Urals and the neighbouring regions.

Literature review

The prospects of the Northern Sea Route as an international transportation corridor, especially in connection with Sabetta Sea Port, are widely discussed nowadays. In this light, Sabetta is seen as the main driver for the development of the Arctic [1–3].

There are numerous recent studies that point out the considerable prospects offered by the proj-

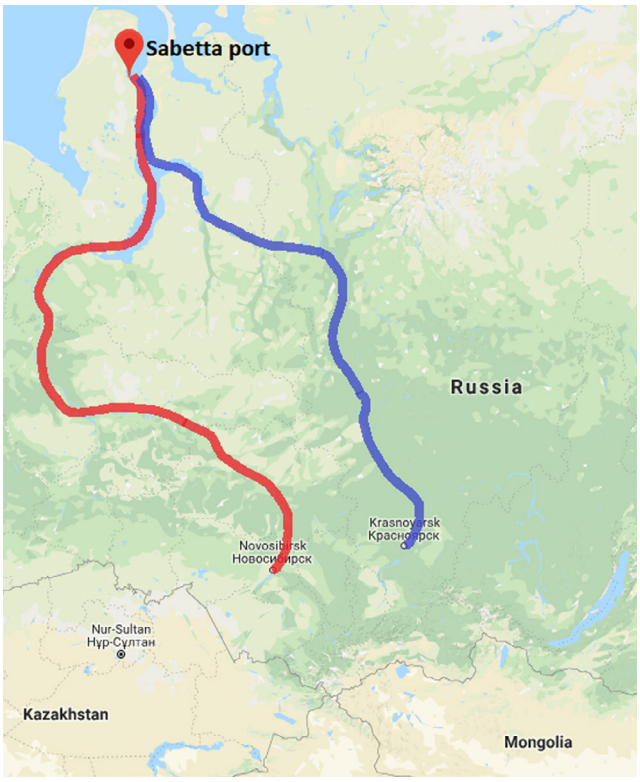

Figure 1. *Model of the international transport corridor via the NSR and Sabetta*
Source: authors (trajectory); Google Maps (map)

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ect [3–11]. Some studies described models for transit shipping along the NSR and made conclusions about the economic viability of this project [8; 12; 13].

World history knows a lot of success stories, when simple towns due to their competitive advantages turned into international logistics hubs and started playing important roles in international economy, for example, Singapore and Dubai [14]. At the same time, despite the evident competitive advantages of the port, Sabetta project is still at its early development stage. In our opinion, the political factor impedes further progress of this project. According to Kozmenko, Selin, Salveliev, Stchegolkova, "development and utilization of the defensive potential by the Russian Federation in the Arctic is considered to be a forced response to potential threats and prevention of aggressive actions against the Russian Federation… substantial potential for conflicts is nested in the attempts of non-Arctic countries to get access to the resources of the North" [15].

This opinion is hard to disprove. However, we shall proceed from the premise that international economy will follow the course of sustainable development, and consider in this paper the economic component of the NSR's development.

Methodology

This research is aimed at optimizing the network model of the international transportation corridor via the NSR. The methodological framework used for this purpose includes the method of branches, arbitrary variation in network programming, and graphical modelling. Similar methodology was previously applied for the analysis of the NSR's potential for the development of the European North-East, and the northern Urals and the Komi Republic.

The goal of network programming in this research was to add new ribs to the model. The research focuses on the railroad network on the Yamal Peninsula linked to Sabetta (node 23 – common drain). The common source in this model (node 22) is Moscow – Vladivostok railroad. The graph nodes represent the existing administrative centers of the Russian Federation (the list of nodes is presented in Table 1). The task for adding new ribs is a final unigraph, whose ribs and nodes have transit capacities and costs related to processing and transporting units of the flow:

– V – set of graph nodes (n is the number of nodes);

– U – set of all graph ribs (K is the number of ribs);

– Ud – set of possible new ribs (m is the number of new ribs);

– Udi – is a set of new ribs incident to the *i*-th node;

– +Ui – set of ribs outgoing from the *i*-th node;

– –Ui – set of ribs incoming into the *i*-th node.

Table 1

Section of the railway line for the transnational transport corridor

№	Node	Section of the railway line	Status
1	*Bovanenkovo*	*Bovanenkovo* – Karskaya	operational
		Bovanenkovo – Payuta	operational
2	Pajuta	Payuta – Novy Port	planned
		Payuta – st. Obskaya	operational
3	st. Obskaya	st. Obskaya –Vorkuta	operational
		st. Obskaya –Salekhard	under construction
		st. Obskaya – Polunochnaya	planned
4	Vorkuta	Vorkuta – Moskow	operational
5	Salekhard	Salekhard – Nadym	under construction
6	Nadym	Nadym – Pangody	under construction
7	Pangody	Pangody – Novy Urengoy	under construction
8	Novy Urengoy	Novy Urengoy – Yamburg	operational
		Novy Urengoy – Korotchaevo	under construction
9	Korotchaevo	Korotchaevo – Purpe	operational
		Korotchaevo – Igarka	planned
10	Purpe	Purpe – Noyabrsk	operational
11	Noyabrsk	Noyabrsk – Voynovka	operational
12	Igarka	Igarka – Dudinka	planned
13	Dudinka	Dudinka – Norilsk	operational
14	Voynovka	Voynovka – Tyumen	operational
15	Tyumen		
16	Karskaya	Karskaya – Harasavay	planned
17	Novy Port	Ob Bay port	
18	Harasavay	NSR port in the Yamal Peninsula	
19	Norilsk	final station in Krasnoyarsk region via the port of Dudinka	
20	Yamburg	Ob Bay port	
21	Polunochnaya	planned station in the Khanty-Mansy Autonomous District	
22	Istok	Railway stations along Moscow-Vladivostok line (Novosibirsk, Omsk, Krasnoyarsk, etc.)	operational
23	Sabetta	*Bovanenkovo* – Sabetta	planned

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The optimality criterion is the total cost of shipping goods within a fixed period of time. The costs include transportation costs, transit payments within the nodes, and the cost of creating new ribs.

Model and results

The resulting model for the key railroad routes connecting the Urals and Siberia with Sabetta and the NSR is based upon the analysis of the existing, designed, and planned railroads, the length of the railroads, and other factors (see Figure 2).

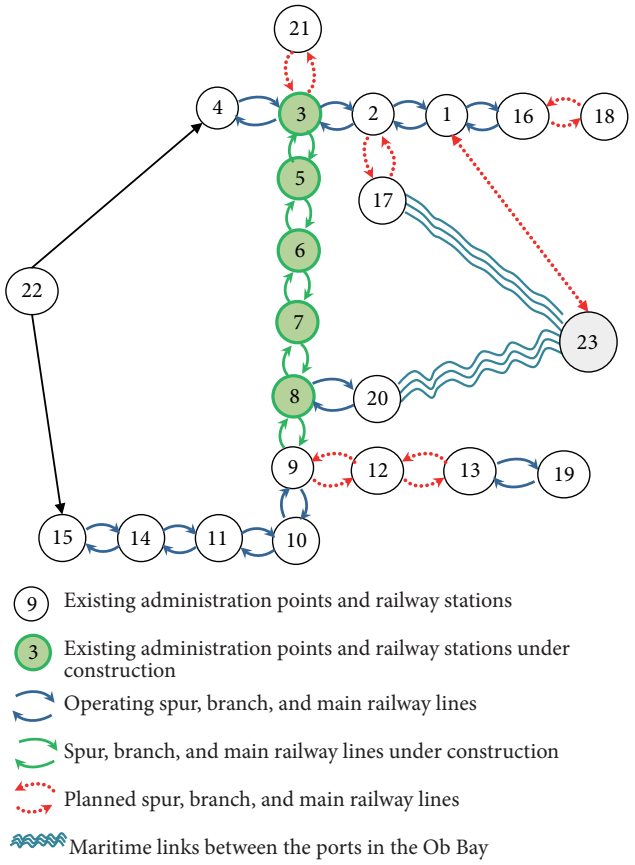

Figure 2. *Graphical model of the main railway lines connecting the Urals and Siberia with Sabetta and the NSR*

The nodes are listed in Table 1 in the methodology section.

Figure 2 illustrates that the existing administration points and railway stations under construction (p. 3, 5, 6, 7, 8) play the main role in hub development and are, therefore, crucial for investment and upgrading. Maritime links between the ports in the Ob Bay will provide this project with additional economic advantages and will be the driver for regional development.

Graphical model of the key railroad links of the Urals and Siberia with Sabetta and the NSR

Our net model of transportation between Ural and Siberian regions with Sabetta and the NSR has shown that for the moment Sabetta and the other Yamal peninsula ports are not directly connected by railroad with any central Russian regions. The only available railroad is Bovanenkovo – Vorkuta line (via Payuta and Obskaya stations). However, the capacity and length of this line are neither cost- nor time-efficient. This transportation corridor also leaves much to be desired in terms of cargo delivery time.

Commissioning of the railroad via Salekhard and Novy Urengoy (Obskaya station – Salekhard – Nadym – Pangody – Novy Urengoy) would improve transport connectivity between the Urals and Siberia and Yamal seaports, which would also reduce the shipping costs and time.

Implementation of the multimodal approach would provide economic impulse for northern regions of the Urals and Siberia (Figure 3): new transportation infrastructure would stimulate construction projects in the connected regions, which would, in turn, create new jobs and industries there.

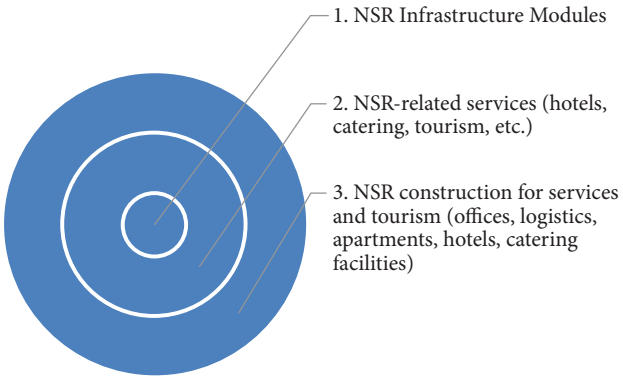

Figure 3. *Model of regional development for Siberia and the Urals based on the NSR project*

Conclusion

The international transport corridor via the NSR and Sabetta involves building a complex transportation network, which is allegedly going to include sea, river, railway and road transport.

Currently, sea ports of the Yamal peninsula have only one railway exit to the main routes via Vorkuta, which is obviously not enough for efficient cargo transportation. It is necessary to create

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a multimodal transportation hub in the Ob River region and supplement Sabetta's port capacities with railway, river, and automobile transport to enhance the efficiency of federal investment and establish a good foundation for new business projects, such as a free industrial and commercial economic zone. The NSR project is also likely to produce a considerable synergistic effect for regional development in remote areas of the Urals and Siberia.

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Comparative analysis of operational frameworks of special economic areas in Russia

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ABSTRACT
There are fourteen types of special economic areas currently operating in Russia, with different federal ministries actively lobbying and then supervising the establishment of this or that type. We compare operational frameworks in different types of such areas, placing an emphasis on the areas of priority socio-economic development, which are now being established in closed towns, monotowns and the Far East. Unfortunately, Russia's special economic areas are often criticized for their inefficacy due to the lack of systemic approach on the federal level and the conflict of interests between the key stakeholders (residents, municipalities, local companies, and local communities). Goals of regional development do not correlate with the national priorities and strategic goals. Another problem is inconsistent managerial decision-making both on the part of regional authorities and management of large enterprises. No clear, justified criteria are established to evaluate the areas' progress and no threshold values are specified. Although there is a significant concentration of special areas within certain regions, there is no integral, coordinated program or plan of action. Thus, synergetic interaction between the stakeholders is impossible. The existing procedure of establishing special areas takes into account neither the level of development of their host regions nor the quality of their development potential. These problems can be addressed through a regional industrial policy designed on the basis of the industrial-synergetic approach. Such approach makes it possible not only to focus on institutions of development and institutional transformations but also to take into account phase transformations and structural transformations in the system of areas of priority socio-economic development. The resulting organizational mechanism will be able to adjust to external uncertainties and, together with the system-forming factors, will enhance socio-economic development both on the regional and national level.

KEYWORDS
institutions of development; conflict of interests; systemic approach; comparative analysis; industrial policy; institutional-synergetic approach; retrospective analysis

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Сравнительный анализ условий функционирования территорий с особым режимом ведения предпринимательской деятельности

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АННОТАЦИЯ
В настоящее время в России действует 14 типов территорий с особым режимом ведения предпринимательской деятельности. Формирование той или иной формы территориального развития активно лоббируют и затем курируют разные федеральные министерства. Сравнительный анализ выявил схожесть основных государственных преференции резидентам ранее созданных территорий с особыми условиями хозяйствования и показал ключевые отличия режима территорий опережающего социально-экономического развития, создаваемых в монопрофильных муниципальных образованиях. Результаты сравнительного и ретроспективного анализовпозволили сформулировать ведущие проблемы, которые лежат в основе малой эффективности этих территорий – это отсутствие системного подхода к созданию территорий и конфликт интересов стейкхолдеров (резиденты, действующие предприятия/аборигены, муниципалитеты, жители территории). На отсутствие системного подхода указывают следующие

КЛЮЧЕВЫЕ СЛОВА
институты развития; конфликт интересов; системный подход; сравнительный анализ; промышленная политика; институционально-синергетический подход; ретроспективный анализ

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признаки: цели территорий не взаимоувязаны с главными национальными приоритетами и стратегическими задачами развития страны; разрозненность управляющих воздействий со стороны руководства территорий и крупных предприятий; нет понимания, что подразумевается под опережающим развитием; не заданы и не обоснованы критерии опережающего развития и их пороговые значения; концентрация различных инструментов развития территорий в одной местности без разработки согласованной программы действий не включает механизм синергетического взаимодействия и не ориентировано на получение синергетических эффектов; действующий формат создания особых территорий, не учитывает уровень и качество потенциала развития данных территорий. Решение выявленных проблем предлагается реализовать в рамках территориальной промышленной политики, разработанной на основе институционально-синергетического подхода. Институционально-синергетический подход позволяет не только акцентировать внимание на институтах развития и институциональных преобразованиях, но и учитывать фазовые, структурные трансформации в системе ТОСЭР, проектировать организационно-экономический механизм, учитывающий степень неопределенности внешней среды, системообразующие и системоформирующие факторы, что в комплексе придаст необходимое ускорение социально-экономическому развитию как территории, так и региона, и страны в целом.

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ДЛЯ ЦИТИРОВАНИЯ
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Introduction

The first attempts to create special zones of economic development were made in Russia in the early 1990s, when the country was transitioning to a market economy. Free economic zones were established to attract foreign investment and promote Russian products on international markets by offering potential residents tax and business incentives. In 2018, in Russia, there were 14 types of SEZs used for regional development, including so-called areas of priority socio-economic development, industrial parks, and technoparks [1].

Among economists and the government some doubts have arisen, however, concerning the efficiency of these projects. The most recent type of special zones is the area of priority socio-economic development, mostly located in the Far East, monotowns and closed towns. These areas differ in terms of the regulatory incentives offered to their residents and the degree of state participation in the project. A more in-depth research is required into the mechanisms of establishing and managing these areas in order to answer such questions as: is there a need for other new types of special areas? What is the optimal approach to establishing such areas? How different should they be from the already existing types of areas?

Conceptual framework

Russian studies of special zones seek to systematize the experience of their establishment, management and performance assessment. As a rule, such areas are created to help a struggling economy and to boost the socio-economic development of a specific region. Some studies focus on certain types of zones and their characteristics.

A separate group of studies deal with conceptual questions underpinning the creation of special zones. Such studies also tend to question the very need to create special conditions for business development [2–6]. E. M. Buchvald and O. N. Valentik emphasize the fact that "the strategy of creating specific 'growth points' in the country's economy leads to greater fragmentation of its economic, business and investment space and its integral competitive environment, the latter being an essential feature of market economy. This also disrupts the country's integral social space. Inhabitants of different regions start to be divided into 'first-class' people or those who get to work at special zones and other similar areas (sufficient income, better career prospects) and 'second-class' ones, who are left outside of these areas (low income, grim career prospects)" [7].

A number of studies point out the fact that, despite their alleged differences, all types of special zones share basic parameters [8–10]. For instance, E. M. Tsygankov contends that regulations of the Free Port of Vladivostok are virtually the same as those of areas of priority socio-economic development, especially concerning tax exemptions. In fact, the concept of such areas is not new but is a mere continuation of an earlier concept of territorial development zones, with the latter stemming from an even earlier concept of special economic areas. Thus, instead of improving the

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already existing form of zones, the government has created at least four similar ones [11]. Other studies [12] demonstrate the fundamental differences in the ways regional economies function in this or that type of zones.

Some studies [13–16] draw comparisons between Russian and international models and discuss the reasons for the success of the latter. For instance, the experience of Singapore and the thirty years of China's experience (which allowed the country to achieve a high level of post-industrial development) showed that the success of special zones is determined by the two factors: firstly, the building of production facilities and social infrastructure was funded by the government and some funds were provided through public-private partnerships. Secondly, the system of incentives included economic ones such as suspension of customs duties and taxes, guarantees of cost recovery and repatriation of profits to international investors [17]. Areas of priority socio-economic development are a comparatively new instrument, although it has been partially based on Russia's previous experience of free economic zones and partially adopted from China's experience. China set up special economic zones in its southern provinces and thus managed to attract considerable investment and ensure technology transfer from foreign companies [18]. A number of studies show the low efficiency of Russian special zones and describe the problems the government faces when selecting strategic priorities for the country's socio-economic development [19–22].

V. V. Pechatkin points out the following strategic planning problems of regional development: the lack of commonly accepted methodological approaches to priority setting; prevalence of expert evaluations, which can be very subjective, in priority setting; and the lack of an adequate system for monitoring regions' competitive sustainability [23].

In the medium- and long-term, there is a discrepancy between the actual results of state projects and their expected outcomes. Due to delays in decision-making, which means that these decisions do not take into account the natural changes in internal and external environment of the region, in two- or three years' time projects change dramatically (in some cases they are even cancelled altogether) and the threshold values become unattainable. As a result, strategic planning of regional development loses some of its value and has considerable practical limitations. Among other things, this is due to the fact that when traditional approaches are applied, strategic documents do not take into account the factors that in certain conditions may become crucial, that is, factors associated with non-linear, unbalanced development.

In order to identify strengths and weaknesses of strategic planning, we are going to conduct a retrospective analysis of Russian special zones of economic development. Comparison of the key parameters of the systems referred to as "areas of priority socio-economic development" with previously created types can bring to light the possible risks that may lead to a failure to achieve the goals and the general inefficiency of such projects.

Restrospective analysis of Russia's special zones of economic development

In contemporary Russia, since 1990, new types of zones have been created on a regular basis. Figure 1 shows this process as a spiral, indicating the dates when these types were created, supervisory bodies, and the corresponding number of zones (Figure 1). Each spiral turn indicates a new stage in the system of territorial development and presents this development as a network of zones operating in the country.

In the 28-year period, there have appeared 10 types of zones and 579 zones (as of December 2018). Different federal ministries actively lobby and then supervise the establishment of this or that type. The leader in this respect is the Ministry of Economic Development of the Russian Federation, which has high expectations for their success. Such types as zones of territorial development did not catch on; the majority of zones were deemed ineffective, and control over them was delegated to regional authorities; the majority of free economic zones were closed due to their inefficiency.

S. N. Leonov supposes that it was the struggle between federal ministries for budget funds that determined such extreme diversity of zones and explains the corresponding state policy by the government's inflated expectations of quick returns. He also points out that instead of conducting a thorough analysis of the reasons for the apparent success or failure of these projects, federal authorities chose to imitate frenzied activity by establishing more and more new zones. Each time they expected that the new instruments for supporting residents of these zones would be more successful than before [24].

Online ISSN 2412-0731

Figure 1. *Development of special zones in Russia (1990–2016)*

The first eleven free economic zones were opened in 1990–1992. This process was contradictory and ambiguous: on the one hand, the experience of creating free economic zones in large territories (e.g. "Yantar" in Kaliningrad region, "Nakhodka" in Primorye) was mostly negative. On the other hand, by 1996, the country already had 18 free economic zones. The main challenge inherent in implementing these projects was the lack of a coherent legislative framework, which hampered the progress: the draft of the corresponding federal law was rejected twice by the President and the already existing laws failed to provide the answers to all the questions of how these zones were to be established and managed, which led to the lack of systemic approach (the institutional conditions were not described). Thus, regions had to compete for federal subsidies as on the federal level there was no well-established mechanism of providing subsidies, guarantees and other incentives to free economic zones [25].

Since 2005, all free economic zones were closed except for two – in Magadan and Kaliningrad. In 2014, another free economic zone was created in the federal city of Sevastopol, Crimea. Since then, the government has embarked on developing a new type of zones modelled after the major Chinese zones in Shanghai and Shenzhen. Their Russian counterparts relied on the same principles as free economic zones: tax exemptions and preferential treatment, direct investment from the federal budget and so on. The Federal Law of 22.07.2005 № 116-ФЗ "On Special Economic Zones in the Russian Federation" set the following goals: to manufacture new types of products, develop knowledge-intensive sectors of economy and manufacturing industries, infrastructure, tourism and recreation.

Online ISSN 2412-0731

As of 1 January 2018, there were 25 special economic zones with 650 residents in Russia (9 of them specialize on industrial production, tourism and recreation; 6, on innovative technologies; and 1 port). According to the official data, residents' volume of investment is about 850 billion roubles, out of which over 306 billion (36% of the total planned investment) was provided by 102 companies with foreign capital from 34 countries. In the twelve-year period, about 290 billion roubles were invested into launching the residents' production – 446.0 million roubles were spent on each resident. Over 28 thousand jobs were created and residents paid customs duties and taxes worth of over 85 billion roubles to budgets of all levels[1]. An audit conducted by the Accounts Chamber in 2016 found evidence for these areas being inefficient in many respects.

– Between 2006 and 2015, the Russian government invested 186 billion roubles (122 billion allocated from the federal budget and 64 billion from regional budgets) into creating 33 special economic zones. The returns in the form of tax and customs payments were 40 billion, that is, the state got 1 rouble for every 4.65 roubles spent on such projects.

– Only 60.1% of the 214 thousand ha allocated were actually put to use.

– Out of the 758 objects of infrastructure it was planned to build, only 526 were put into operation.

– The government had to sponsor certain zones from the federal budget even though originally it had been planned that they would be funded on the regional level. At the same time, some were funded by regional budgets even though they had nothing to do with special economic zones.

– As of 1 January 2015, residents' revenues accounted for only 0.2% of the GRP in the twenty regions that hosted the zones.

– 18,177 jobs were created, which made up 72% of the target figure.

– Creation of one job cost the budget 10.2 million roubles[2].

The ten-year history of special economic zones in Russia has shown that they have failed to become an effective instrument to support and enhance the growth of national economy. The way they were created and managed reveals a formal, irresponsible attitude, the lack of administrative discipline and the lack of accountability. As a result, no one was held responsible for the failure of these projects and no real economic effect was achieved.

Another kind of zones is "naukograd" or "science city". In 1999, a number of cities and towns with a high R&D potential were granted this status. Over a third of them were located in Moscow region (31 "science cities", including Zelenograd, which is an administrative district of Moscow). In Central Russia, there are 8 science cities, in the Urals, nine, and in Western Siberia, seven. Moreover, there are four 'academic towns' (in Russian, "akademgorodok") of the Siberian and Far Eastern Branches of the Russian Academy of Sciences. The status of "science city" is granted for a period of five years and can be continued by the decree of the federal government. "Science cities" mainly specialize on the following:

– aerospace construction and space research (Zhukovsky, Korolev, Yubileyny, Zvezdny gorodok, Krasnoznamensk, Mirny, Znamensk, Dubna);

– electronic and radio engineering (Zelenograd, Khimki, Pravdinsk);

– automation, mechanical and instrumentation engineering (Reutov, Zarechny, Obninsk, Pereslavl-Zalessky, Raduzhny-9, Trekhgorny);

– chemistry, chemical physics and creation of new materials (Biysk, Dzerzhinsk, Pereslavl-Zalessky);

– nuclear engineering (Sarov, Zarechny, Ozersk, Snezhinsk, Trekhgorny, Lesnoy, Novouralsk, Seversk, Zheleznogorsk, Zelenogorsk);

– power engineering (Chernogolovka, Troitsk, and so on);

– biology and bio-technologies (Puschino, Protvino, settlement Borok in Yaroslavl region, two settlements Koltsovo and Krasnoobsk in Novosibirsk region).

Subsidies for "science cities" include funding allocated for R&D; innovation projects aimed at creation and development of hi-tech production, especially those in the national priority spheres; maintenance and development of the cities' infrastructure.

Since 1990, in Russia, technoparks or industrial parks started to be used as "engines of growth".

[1] *Annual Report of the Public Joint-Stock Company "Special Economic Zones" of 2017*. Retrieved from http://www.russez.ru/disclosure_information/oao_oez/godovie_otcheti/ [Accessed September 14, 2018].

[2] *Performance Audit Report of the Public Company "Special Economic Zones" and the Legal Entities Established for Management of Special Economic Zones in Russian Regions, in particular, the Company's Efficiency in the Use of Public Funds, Public Assets and Other Resources*. Retrieved from http://www.ach.gov.ru/activities/bulleten/875/26840/ [Accessed September 14, 2018].

Online ISSN 2412-0731

As a rule, they occupied former factory sites. In 2015, the first industrial park "KIP 'Master'" was created, which occupied 37 thousand sq.m., the former site of the factory "Remdisel", a subsidiary of "Kamaz" corporation. As of mid-2018, the park's total area is 1,364.65 thousand sq.m., it has 260 registered residents and they have created over 5 thousand jobs[3]. In 2012–2018, 176 industrial parks were launched in Russia (see Table 1). There are industrial parks in Novosibirsk, Tomsk, Moscow, St. Petersburg, Nizhny Novgorod, in Moscow region and other parts of the country. The growth leaders are those located in Central and Volga federal districts, primarily Moscow region and Tatarstan. 10% of the residents are foreign companies from 27 countries (over 80 from Germany; over 40 from the USA; and over 20 from Japan)[4].

Table 1

Key performance indicators

№	Year	2012	2018	Growth
1	Number of industrial parks	64	176	2.8 times
2	Number of host regions	27	51	1.9 times
3	Industrial parks' area, ha	14 315	44 900	3.1 times
4	Number of residents, ths	0.9	2.7	3.0 times
5	Number of jobs created, ths	45.0	160.9	3.6 times

Source: Indicators of industrial parks' performance in 2012 (based on the data provided by the web-site of the Government of Russia and the Ministry of Industry) (See: General Aspects of Industrial Policy: Key Decisions and Facts for the Six-Year Period). Retrieved from http://government.ru/info/32124/ [Accessed 2018, 14 September], Statistical Summary of the Geo-Information System's Data on Industrial Parks. Retrieved from https://www.gisip.ru/stats_sum/pdf/ru/ [Accessed December 27, 2018].

Unlike technopolises and technoparks, industrial parks usually lack R&D infrastructure or similar facilities. Economically, industrial parks rely on lease of equipment and manufacturing facilities, tax incentives, reduced rental costs, and public-private partnership.

According to the Association of Clusters and Technoparks in the Sphere of High Technologies, in Russia there are 192 organizations that can be described as technoparks, 125 of them are located in 44 Russian regions and meet all the existing criteria and requirements. At the end of 2016, the overall revenue of the residents of 125 technoparks was 203.5 billion roubles; the total amount of import-substituting production, 27 billion roubles; the number of patents granted, 900; the total amount of a resident's R&D expenditures per one employee in 2016, 2.2 million roubles; the average level of a resident's R&D expenditures, 147.1 thousand roubles [26].

Investment into the infrastructure of these technoparks brought some controversial results. The study of planned expenditures of Russian regions in 2013–2014 as indicated in the Plan of Establishment of Investment Objects and Objects of Infrastructure has shown that on average a Russian region spends over 1 billion roubles on industrial parks and similar, let alone the indirect expenses for the development of the related engineering infrastructure. However, as the study of the National Financial Research Institute has revealed, the occupancy rates in the majority of industrial parks do not exceed 50%, which means that the returns received by the management companies are insufficient [5].

In 2012, the Russian government approved the establishment of 25 regional innovation clusters and provided funding from the federal budget for the programs which involve the following:

– funding activities of organizations specializing on methodological, organizational, analytical and informational support for the development of regional clusters;

– professional retraining and advanced training (including abroad) for the staff of the organizations listed as program participants;

– consulting these organizations about designing innovation investment projects;

– conducting exhibitions, fairs and similar events and participation of these organizations in such events (forums, conferences, seminars, round tables) in Russia and abroad;

– development of innovation, education, transport, energy, engineering and social infrastructure.

Since 2011, areas of territorial development started to be opened in Russia with the aim of ensuring more balanced socio-economic development of the regions and attracting investment to their economy. The Decree of the Russian Government of 16.12.2016 № 1415 "On the Approved List of Regions of the Russian Federation for Creating Zones of Territorial Development" includes twenty regions for creation of such areas. At the moment, in the majority of these regions, most of these projects are still at an early stage of development.

[3] *About the company*. Retrieved from http://www.kipmaster.ru/about-company/ [Accessed 2018, 14 September].

[4] *Compiled by the author by using the data from "General Aspects of Industrial Policy: Key Decisions and Facts for the Six-Year Period"*. Retrieved from http://government.ru/info/32124/ [Accessed September 14, 2018].

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In 2015, port areas of Vladivostok, Petropavlovsk-Kamchatsky, Vanino, Korsakov, and Pevek were integrated into the Free Port of Vladivostok, which offers special tax, customs, investment and other regulations ("porto franco"). The aim of the free port is to implement infrastructural projects for building and reconstruction of port terminals; warehouse complexes and other transport and logistics facilities. Russian companies, including those with foreign capital, are eligible to become residents of this zone. In order to become a resident of the Free Port of Vladivostok, a company has to meet certain requirements: it has to be registered on the territory of this zone, have a new investment project or a new kind of specialization if it an an already existing company, offer a minimum of 5 million roubles as an investment for the period no longer than three years since the date when it was included into the registry of the port's residents.

In 2016, the Accounts Chamber[5] has deemed excessive and inefficient special economic zones and other similar types (innovation clusters, industrial parks, agricultural and industrial parks, technoparks, high technology parks created by the Ministry of Communications and Mass Media, tourism parks, zones of territorial development, areas of priority socio-economic development, regional special economic zones, and so on). Such instruments cannot be applied nationwide as a universal solution to all problems because this way they lose their economic significance for their residents. The more zones of territorial development of various kinds are created, the more evident becomes the lack of systemic approach and rational goal-setting in this sphere [27].

Comparative analysis of operating frameworks of areas of priority socio-economic development and other types of zones

In Russia, areas of priority socio-economic development have been established since 2015, first in the Far East and then in struggling monotowns. Since 2017, it has become possible to create such areas in any monotown. At the beginning of October 2018, the federal government ordered to establish 18 areas in the Far East and 63 in monotowns and closed towns. Areas of priority development are intended to turn these territories into drivers of economic growth and are modelled after Chinese special economic zones, used to revive depressed regions [28].

We analyzes operating frameworks of areas of priority socio-economic development created in monotowns to find out if they differ significantly from those of other special economic zones (see Table 2). Far Eastern areas share many features with special economic zones: they are organized and funded by the government, managed by state companies, and the building of infrastructure is also funded from the federal budget. Their residents enjoy tax exemptions, reduced rent and insurance costs, relaxed regulations of land use, state and municipal control, access to the necessary infrastructure, and customs incentives.

It should be noted that resident companies in all types of zones are obliged to register on the territory of the city/town where the zone was created. The minimal volume of investment for potential residents of special industrial zones is 120 million roubles, for residents of port zones – 120–400 million roubles. The minimal volume of capital investment for residents of areas of priority socio-economic development is set for each region individually.

Resident application procedures in all types of zones are similar: registration, submission of an investment plan, conclusion of an agreement or a reasoned refusal, preferential tax treatment. Far Eastern areas differ from special economic zones in a number of aspects: they have a wider range of authorized types of activities and can be created by uniting territories of several cities or towns.

Areas in monotowns can be set up and operate within the boundaries of the already existing towns, unlike those in the Far East and the majority of special economic zones. Areas in monotowns do not have managing companies and there is no direct infrastructure investment from the budget. Residents' investment projects are required to create a certain number of permanent jobs.

If we look attentively at the concept of special economic zones, we can notice that there is a serious discrepancy between the goals of the interested parties. For example, there exists a clash of interests between resident companies and local companies. On the market where everybody competes with everyone else one should not expect local manufacturers to be overexcited about the appearance of a new rival. On the other hand, companies that entered the market before resident

[5] *In ten years, special economic zones have failed to become an effective instrument for the support of Russian economy.* Session of the Accounts Chamber of the Russian Federation on the Results of the Audit of Special Economic Zones in 2016. Retrieved from http:// http://www.ach.gov.ru/activities/control/26369/ [Accessed September 14, 2018].

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companies already have warehouses, marketing infrastructure and so on, and they have already dealt with such problems as power supply and waste disposal. A new resident needs to tackle all of these problems and, as a result, their products are more expensive.

There are other clashes of interests, for example, between the management of resident companies and the prospective workers or local inhabitants; between regions, towns or cities that have acquired a special status; between special zones competing for residents and workforce; between newly established zones and the already existing ones, and so on.

The currently existing models of areas of priority socio-economic development aim to create "paradise" for investors by offering them tax exemptions and other kinds of preferential treatment and do not take into account the specific characteristics of each region. There is a common misconception that investment and creation of jobs will automatically guarantee modernization and economic growth [29].

Table 3 illustrates the key goals pursued by different stakeholders involved in creating and managing special economic zones in Russia. Let us compare them with the main national objectives and strategic goals described in the existing official documents[6]. For the period until 2024, the government of Russia has set the goals:

[6] *Decree of the President of the Russian Federation of 07.05.2018 No. 204 "On National Objectives and Strategic Goals in the Development of the Russian Federation for the Period Until 2024"*. Retrieved from http://www.kremlin.ru/acts/bank/43027 [Accessed June 20, 2018].

Table 2

Operating framework of priority development areas and other zones

№	Conditions	Special economic zones	Areas of priority socio-economic development in the Far East and closed towns	Free Port of Vladivostok	Areas of territorial development	Areas of priority socio-economic development in monotowns
1	Period, years	49	70		12	10
2	Area	A separate territory is allocated within a city/town	Within one or several cities/ towns in one region			Within a city/town
3	Managing company	Required			Not required	
4	Tax regime	Free tax zone			No tax exemptions	
5	Infrastructure investment from the federal budget	Provided			Not provided	
6	Investment type	greenfield and brownfield			brownfield	
7	Limitations	Mineral extraction is not allowed, except for the extraction of mineral water and other resources used for medical treatment; It is not allowed to manufacture and process excisable goods (except for cars and motorbikes)	Each area of priority socio-economic development has its own list of authorized economic activities.	It is allowed to engage in any types of entrepreneurial activities that are legal in the Russian Federation		Each area of priority development has its own list of authorized 'foreign economic activities'. Residents are not allowed to sign contracts with town-forming enterprises and (or) to acquire revenues from selling products of town-forming enterprises if this revenue exceeds 50% of their total revenue from the investment project; It is not allowed to manufacture excisable commodities (except for cars and motorbikes) and to engage in such activities as extraction of crude oil and natural gas, providing services in the sphere of oil and gas extraction, oil refining, wholesale and retail trade, pipeline transportation, timber logging, real estate operations, and in other types of economic activity which involve 20% or more of the average staff number of all organizations in the monotown
8	Use of foreign labour	General regime	Facilitated visa regime		General regime	Foreign workers should not account for more than 25% of the total workforce

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Table 3

Key goals of the government and stakeholders in special economic zones

Levels	Strategic goals	Stakeholders' goals
Federal level President, federal government, state corporations	Ensuring Russia's entrance into the top five of the largest world economy, digitalization of economy, and enhancement of technological development	Special zones should become "growth points" and "drivers of accelerated growth" by offering tax exemptions and other kinds of preferential treatment to resident companies.
Regional level Regional government, large regional companies	Sustainable development of the region	Obtaining maximum incentives and funding from the federal budget
Municipal level Municipal authorities, local inhabitants, small businesses, micro-enterprises	High living standards	High wage levels. Developing/maintaining businesses. Jobs with good working conditions. Good environmental conditions/environmental sustainability/ecological enhancement. Good social infrastructure and housing

– enhance the country's technological development, increase the number of organizations engaged in technological innovation to 50%;

– ensure implementation of digital technologies in economy and social sphere;

– ensure that Russia should become one of the five largest world economies, the economic growth rates exceed the global level while maintaining macroeconomic stability, in particular maintaining inflation on the level of no more than 4%;

– create in the key branches of economy, primarily in manufacturing industry and in agriculture, a highly productive, export-oriented sector based on modern technologies and provided with highly qualified staff.

Interestingly enough, residents of special economic zones do not have to meet any requirements concerning the level of the technologies they apply. The analysis of areas of priority socio-economic development in monotowns and the Far East shows[7] that the types of production their residents open belong to the second or third technological modes. Therefore, it becomes obvious that the purpose of special zones does not correlate with the general strategic goals of national development.

There is a gap (discrepancy) between the general strategy of regional development and narrower goals of development institutions, which means that a more comprehensive system of regional institutions is necessary. Special economic zones are not just instruments of state policy, rather they should be seen as a part of the general strategy aimed at transforming national economy [30]. As for resident companies, they primarily seek to gain maximum funding from the state and maximum tax exemptions and other kinds of preferential treatment. The lack of cohesive business strategies combined with the desire for more preferences and funds results in a failure of resident companies to retain their status. In monotowns alone, five companies did not live up to their resident status. Some residents change their specialization sphere: for instance, "Kama Crystal Technology" in its application for the status of a resident of the priority development area "Naberezhnye Chelny" as of July 2017 indicated its intention to implement an investment project for growing artificial sapphires (included in the List of Foreign Economic Activities under the code "23.99.5 Production of synthetic corundum"). The production cost of sapphires is quite high, but their sale prices are low, which, in addition to the company's debt burden, made it alter the project's specialization and start manufacturing aluminium oxide instead. The company management explained this decision by pointing out that aluminium oxide is cheaper to produce and no less in demand than crystals [31].

However, if we look at the legal documents regulating creation and operation of special economic areas, we won't find any mention of the goals associated with high-tech manufacturing or industrial automation. On the contrary, one of the indicators used to evaluate the performance of such zones is the number of jobs created. The wage level in Russian companies is 2.5 euro per hour, which means that cheap labour is one of the main competitive advantages of special areas for attracting foreign residents (in Denmark, the average hourly pay is 25 euro and in Sweden, 14.9 euro [32]). In Russian

[7] See: *Register of Residents of Priority Development Areas*. Retrieved from http://erdc.ru/upload/reestr-tor.pdf [Accessed December 1, 2018]; *Register of Residents of Areas of Priority Socio-Economic Development, in Russian Monotowns*. Retrieved from http://economy.gov.ru/minec/activity/sections/econReg/monitoringmonocity/2016160505 [Accessed December 1, 2018].

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regions, local inhabitants and potential workers for resident enterprises are mostly interested in the level of pay. While residents are offered some serious incentives in terms of the contributions paid to social security funds, the state does not set any requirements concerning the minimum wage level, which creates a vicious circle: the low wage level results in a low level of purchasing power of the national market, which, in its turn, affects the production output of those residents that specialize on consumer products and services.

Other problems are associated with interactions between business, state and academia such as the lack of protection of the participants' rights; the lack of unified forms of business partnership and legal framework; misuse of resources; low level of management; low quality of outcomes; failed deadlines; and so on [33]. Therefore, it is important to take a closer look at the purpose of different special areas if they are established in the same region and at their operation frameworks in order to make them able to cooperate with each other, local authorities and other stakeholders involved in regional development. It is also important to assess the efficiency of their management – each type of zone has its own management structures and there is likelihood that the managers engage in wasteful spending of state funds and added value created by the manufacturers.

Another problem faced by areas of priority socio-economic development is that there is a lack of coordinated decision-making, which means that the programs and institutions meant to ensure their development often contradict each other. In other words, there is a lack of systemic approach in strategic planning on the national, regional and local levels, which is detrimental for the efficiency of decision and policy-making and often leads to failure. Thus, we are facing a paradoxical situation here: tax exemptions are offered to direct competitors of domestic manufacturers. Moreover, federal and regional funds are spent on creating production infrastructure to attract these competitors to special economic areas. The idea that foreign companies that are offered preferential treatment would contribute to the competitiveness of local manufacturers doesn't stand up to scrutiny since foreign companies are enjoying substantial support on the part of their state authorities in promoting their production abroad [34].

In the current economic conditions there is a fierce competition for potential investors, which, on the one hand, makes city administrations and regional authorities more open for investors and, on the other hand, leads to some serious errors in judgement. For instance, "Naberezhnye Chelny" area has 21 investment projects, out of which seven are those of the enterprises which expanded their production by registering new legal entities to acquire the resident status. It cannot be argued that in difficult economic conditions tax exemptions enable some companies to complete the investment phase in their development, launch production and create jobs, but the truth of the matter is that the creation of these jobs has already been planned and they would have been created anyway, even without additional incentives on the part of the state. It means that owners of the businesses which were granted these tax exemptions were the winners while the budget was the loser as it lost money in the form of tax contributions.

While the authorities are striving to find residents for the zones they are in charge of and zones are competing for investment, the government loses sight of other, equally important issues such as the environmental impact of prospective resident enterprises and the public concerns about the harmful effects of new production. We believe that one of the main reasons for this situation is that there is a lack of carefully planned and balanced industrial policy that would formalize the strategic goals and mechanisms for optimal development of the region's industrial potential and would take into account the current trends on national and regional levels [35; 36]. Another essential question that needs to be addressed is the following: how and at what price can we achieve the technological breakthrough and accelerate growth? The answer to this question should determine the concept of industrial regional development. International scholars approach industrial policy as a mechanism for realizing the region's competitive advantages [37] and for the improvement of the industrial structure of economy [38; 39]. In the context of the fourth industrial revolution, it is impossible to enhance regional development without creating suitable infrastructure for technological innovation [40].

Conclusion

Our retrospective and comparative analysis has shown that the main problem behind the inefficiency of special economic areas is the discrepancy between the key national objectives and strategic goals and the goals pursued by these areas. Moreover, the management of such areas seeks to stimulate competition at all costs. The state offering

Online ISSN 2412-0731

preferential treatment to newly arrived companies accompanied by the call to increase competitiveness has an off-putting effect on the already existing local enterprises, which have been providing jobs for the region for a long time and paid taxes and now have to compete with foreign companies that are offered considerable tax exemptions. Such lack of coordination between the management of areas of priority socio-economic development and large enterprises leads to inefficient use of state funds, which are often invested into competing projects.

There is no clear understanding of what exactly 'priority development' is. Furthermore, there are no criteria or threshold values that would be clearly specified and based on thorough previous research. In fact, there is no knowing whether 'priority development' has been actually achieved or not. Moreover, there is no coordinated choice of instruments for regional development applied within one region and no coordinated plan of action. Such situation makes the mutual synergistic effect impossible.

When territories are granted the status of special economic areas, their development potential is all but ignored. In the conditions of constantly changing internal and external environment, the industrial policy of areas of priority socio-economic development, which relies on the institutional-synergetic approach, is aimed not only at adaptation to radical systemic changes but also at initiating the necessary changes.

In order to stimulate regional development it is essential to provide an adequate institutional foundation for this process, which is seen as a complex of socio-economic institutions, relations and instruments. Our analysis of the combined effect produced by the factors of socio-economic regional development demonstrates that traditional methods are no longer applicable as they are orientated towards managing systems either in conditions of total uncertainty (situational approach) or in conditions when a system can be maintained in a stationary mode (cybernetic approach). The distinguishing characteristic of the institutional-synergetic approach is that it models qualitative changes within the system by creating positive synergetic effects.

Development of an area as an open system can take the form of gradual transition from one phase to another, or go in leaps, or undergo crises caused by intrasystem transformations. Thus, the system is never in a state of equilibrium but there is always a multiplicity of stationary conditions. The instability of the system in this case is regarded as a potential source of growth and the basis for creating synergetic effects. An important element of the institutional-synergetic approach is the concept of self-organization, which is understood as the system's self-development and self-regulation according to the trajectory that the system should be "aware" of.

The aim of a regional industrial policy is to focus on fundamental questions associated with areas of priority socio-economic development: first and foremost, the need to coordinate policies and actions of all the stakeholders (government, business, academia, and the public) in order to ensure the region's economic and social growth. Industrial policy should be unique for each region, it should take into account its resources, its leaders' ambitions and the level of interaction between the key stakeholders.

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Category management in Russian retail sphere (case of the Ural Federal District)

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ABSTRACT
The Ural Federal District is one of the leading Russian regions: it has a dynamically developing economy characterized by vigorous competition. One of the ways to enhance companies' performance in these conditions is category management. This article seeks to evaluate the level of implementation of category management principles in the retail sphere of the Ural region and to identify the main regional features of retail management. The article provides a brief overview of the approaches to defining category management and outlines its key elements. The empirical part of the study concerns with the results of the survey conducted among category managers of nine Ural retailers. The head offices of these retailers are located in Ekaterinburg and the majority of their stores are situated in the Ural Federal District. It was found that although all the respondents are aware of the key principles of category management, not all of them are able to put these principles into practice systematically, mainly due to the policies of their companies, which are often orientated towards gaining quick, short-term profits rather than building balanced long-term strategies. Category managers also often face constraints in their decision-making and lack modern tools for data processing and analysis. The conclusion is made that category management offers Ural retailers a range of opportunities for further development if they choose to invest in modern equipment and personnel training and revise their supplier relationship policies.

KEYWORDS
regional retail; Ural Federal District; comparative analysis; regional analysis; category management; retailer; customer needs

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Оценка степени распространения категорийного менеджмента в региональных торговых сетях (на примере УрФО)

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АННОТАЦИЯ
Уральский Федеральный округ является ведущим промышленным регионом с динамично развивающейся экономикой. Поэтому в условиях постоянно меняющейся рыночной ситуации, ускорения процессов глобализации, усиления конкуренции и перенасыщения рынков товарами актуальность темы обусловлена важностью поиска новых путей повышения потребительской ценности товаров с целью удовлетворения потребностей и запросов покупателей. Целью данной статьи является проведение сравнительного анализа торговых сетей Уральского Федерального округа по степени распространения категорийного менеджмента. В соответствие с целью исследования были поставлены и решены следующие задачи: выделены восемь элементов категорийного менеджмента, сформулированы пять гипотез относительно степени распространения категорийного менеджмента в торговых сетях с учетом специфики округа, проведен сравнительный анализ степени распространения категорийного менеджмента в Уральском федеральном округе на основании опроса действующих категорийных менеджеров девяти торговых сетей, головной офис которых находится в г. Екатеринбург и большинство магазинов на территории Уральского Федерального округа. В результате исследования в торговых сетях демонстрируется преобладание смешанных форм управления ассортиментной политикой, выявляются региональные особенности реализации данного подхода, а так же огромный потенциал для дальнейшего развития торговых сетей Уральского региона в данном направлении. Основные методы исследования: экспертный опрос категорийных менеджеров торговых сетей, группировок, системный, сравнительный.

КЛЮЧЕВЫЕ СЛОВА
региональная розница; Уральский федеральный округ; сравнительный анализ; региональный анализ; категорийный менеджмент; торговая сеть; потребности покупателей

ДЛЯ ЦИТИРОВАНИЯ
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Introduction

In the conditions of highly dynamic markets, increased globalization and competition, even the most advanced economies, industries and companies have to deal with the effects of glut, when the supply of a product or a service far exceeds its demand. Customers' needs are constantly changing and so are their expectations. Panacea is usually sought in the areas of innovation, which are able to take into account shifts in customer expectations [1]. These trends affect all spheres of economy in the world, and Russia is no exception. However, different Russian regions, depending on the availability of resources and innovations, have different levels of development, which includes the sphere of sales management methods and technologies. The existing methods are quickly adopted by competitors, which reduces competitive advantages among other market players. Thus, there is a constant search for new approaches and techniques to improve companies' efficiency. Most modern methodologies are based on building long-term relationships with all partners in the value chain (relationship marketing). One of these approaches is category management, which has been developed and implemented in international theory and practice since the late 1980s. In Russia, category management started to develop in the 2000s.

Most researchers choose to focus on the Central Federal District, which has access to most resources, including innovation [2–5], and then extrapolate the results to the rest of Russia, regardless of regional variations. Therefore, it seems appropriate to conduct a comparative analysis of retailers operating in the Ural Federal District and identify regional features in the ways category management is applied in this region.

Methodology and data

The purpose of this article is to conduct a comparative analysis of retailers in the Ural Federal District, focusing on the way they apply the principles of category management in their practices.

The theory of category management was actively developed by such large consulting organizations as AC Nielsen and the Partnering Group Inc. as well as IDDA and ECR. At the next stage, these studies, both theoretical and practical, were continued by Dussart, Joseph, Jaervinen, Verra, Arkader, Ferreira, Desrochers, Dewsnap, Dupre, Gruen, Gooner, Morgan, Perreault, Staeiner, Carr, Coy, Sysoeva, Bozukova and others.

Our study relies on the data on the Urals and Russia in general provided by the Federal State Statistics Service. We have also interviewed category managers of nine retailers, whose head offices are located in Ekaterinburg and the majority of whose stores are on the territory of the Urals. There is sufficient evidence to confirm the efficiency of category management, which is actively discussed in international and Russian research literature [6–10]. We decided to focus on the case of the Ural Federal District to identify the specific regional characteristics of category management in local retail business and compare these features with those of other Russian regions. Our research comprises the following stages:

1) designing a questionnaire based on a three-point evaluation system;
2) formulating the main hypotheses;
3) surveying category managers;
4) data processing and systematization;
5) description and analysis of the results;
6) confirmation or refutation of the hypotheses.

Category management: definition and key elements

There are four main approaches to the concept of category management:

1. Category management is the management of categories aimed at maximizing customers' satisfaction [6].

2. Category management is the management of categories aimed at increasing sales and profits of trade companies by ensuring satisfaction of customers' needs [11].

3. Category management is a form of cooperation between retailers and manufacturers. Proponents of this approach focus on the cooperation between retailers and suppliers/manufacturers, which can significantly increase the benefits for all participants of the supply chain (supplier, manufacturer, trading company, consumer) [2; 8; 12; 13].

4. Category management is a form of cooperation between trading partners and a category captain in order to determine the optimal policy to maximize profits and increase customer satisfaction [14; 15].

We believe that the definition should emphasize what lies at the heart of category management – building of long-term relationships between all the participants in the value chain (marketing relationships). In addition, the proposed definition combines different features of

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category management pointed out by different approaches. Thus, in this paper, we are going to define category management as a strategic approach to management of product categories based on the construction of long-term and mutually beneficial relations between all participants in the supply chain, aimed at maximizing the satisfaction of the end customer's needs, increasing sales and profits of all participants in the supply chain. Thus, category managers in retail companies determine the structure of their respective categories on the basis of the consumer decision tree and current market trends. These managers also form the pricing policy, realize shelf space management, conduct other marketing activities and so on. Within the specified framework, all participants in the supply chain are jointly looking for ways to increase the sales and reduce the costs by increasing the consumer value of the products [16].

Let us now identify the main element constituting category management:

1. The main focus made by retailers is on the consumer rather than on brands or products as such [6]. Systematization of products should be conducted on the basis of consumer understanding of the products and the consumer decision tree [12]. This information is revealed through quantitative and qualitative analysis of categories, including the research of market trends in social networks and customer interviews [7]. All events should be focused on consumer needs [6; 7; 14].

2. The relational approach of all the participants in the supply chain. Building long-term and mutually beneficial relationships allows the participants to gain better understanding of consumer needs, respond quickly to the changing situations, and effectively reduce their costs. Thus, information exchange and pooling of the resources to make them available to all participants of the supply chain can improve the efficiency of their activities [17; 18].

3. Product allocation in product categories, that is, the products are categorized according to consumer vision and needs, which allows the consumer to find a product that, satisfies their desires and expectations [7; 13; 15]. This helps to manage products more efficiently and to identify whether all the consumer needs are met in the context of the consumer decision tree [19; 20]. In addition, categorization provides an opportunity to find synergies between different categories [14].

4. Management of product categories as separate business units [6; 21; 22], which allows the retailer, in particular, the responsible category manager, to focus on each individual category, to understand the needs of customers, to control all stages and processes in the category, to make timely adjustments and to make better decisions on the basis of the most complete and objective information [7].

5. Category managers' responsibility for the categories assigned to them. Category managers manage categories as business units and are fully responsible for the decisions made and the results obtained [15; 23]. This gives them the ability to manage all processes within the category, at all stages – from purchasing the products from the supplier to their sale to the consumer. Thus, category managers evaluate, plan and control the entire process within their categories [21; 24]. In this case, an important aspect is that it is not the process of performing certain functions within the department that becomes fundamental, but the result obtained-an increase in the sales and profit of the company by boosting end customer satisfaction [7; 24]. All strategic decisions are taken in the head office, in particular, by category managers [6; 25]. Assortment, pricing, marketing and merchandising management at the level of specially trained people is more effective and efficient [10; 26].

6. The purpose of purchasing products is to maximize sales, profits and increase retailer traffic at the expense of quality work with the structure of the assortment matrix by forming orders, balancing inventory maintenance and constantly optimizing the purchase system [15; 21]. It is unacceptable to purchase products to obtain marketing payments or to obtain the lowest possible price by filling warehouses [7; 8].

7. The "4P" concept (Product, Price, Place, Promotion) [9]: working with the assortment matrix is based on a deep analysis of customer needs and market trends [14]; pricing in the context of each individual category implies the presence of the planned mark-up for each individual product category [6; 7]; merchandising based on planning of the retailer shelf space and of the product categories planograms [12; 27]; regular promotional activities [8; 10].

8. Availability of high-quality data upload and analysis system. An important element of category management is information management through analysis and planning aimed at plan implementation within the categories [27]. Planning, testing and forecasting, pricing, merchan-

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dising and engaging in promotional activities are important elements of category management [6]. Therefore, the category manager needs to obtain objective, easily accessible data to make decisions and enhance the effectiveness of business processes [7]. In addition, the availability of a quality system of product ordering and distribution helps to provide the right number of the right products to the stores where they are in demand, at the right time and to the right shelf [6].

The key elements of category management described above constitute a part of category management methodology, which was designed and presented by two consulting companies AC Nielsen and The Partnering Group Inc. in 1992–1995.

Empirical data

The effectiveness of the above-described methodology [6–8] was confirmed by the practical experience of Ural retailers [9; 10].

We assessed category management in the Ural Federal District by looking at the following criteria (see Table 1).

Table 1

The Category management elements and their meters

№	Category management elements	Meters
1	Consumer as the main focus	0 – not applied; 1 – partially applied; 2 – fully applied
2	Long-term and mutually beneficial cooperation of all supply chain participants	
3	Products categorization	
4	Categories are managed as business units	
5	The category manager is responsible for the categories assigned to him or her	
6	The purpose of the products procurement	
7	Marketing-mix	
8	Availability of the system of high-quality data analysis	

This article uses the data from interviews with eighteen category managers from nine retailers of the Ural Federal district: "Yabloko", "Galamart", "Monetka", "Rait", "Plus", "Optima", "Kvartal", "Pygmalion", and "Anster". All the interviews were conducted in 2018. These retailers have stores in different cities. All stores or the majority of the stores are located in the Ural Federal District, the head offices are located in Ekaterinburg and all the decisions are made by category managers in Ekaterinburg. Category managers are the people who manage the categories and are responsible for their effectiveness (turnover and profit).

Our sample includes large ("Monetka", "Rait", "Galamart", "Optima"); medium ("Yabloko", "Plus", "Anster"); and small ("Kvartal", "Pygmalion") retailers. We interviewed managers working in various fields: food products ("Yabloko", "Monetka", "Rait"), industrial products ("Galamart"), consumer products, cosmetics ("Optima", "Plus", "Kvartal", "Pygmalion"), and pet products ("Anster"). Table 2 provides brief descriptions of the retailers in question.

In our study, we applied a three-point scale to evaluate retailers' activity in each element of category management. We also asked our respondents for more detailed comments, which allowed us to minimize the degree of subjectivity on the part of respondents in the interview and to eliminate the possibility of any misunderstanding concerning what constitutes category management.

We have formulated five main hypotheses of this research:

1. In the Urals, which is a dynamically developing industrial region, the competition is high and all retailers, regardless of their size, strive to survive on the market. To do this, they use the most modern methods and techniques to maximize their incomes and increase customer loyalty.

2. The need to retain or increase their market share requires significant effort on the part of all trading companies in the region and leads to prevalence of category management methods in all areas of trade.

3. The Ural region offers its residents significant opportunities in the sphere of higher education. Therefore, we can assume that category managers and executive managers of regional and local retail companies should have a high level of training and all the necessary management competencies, in particular in the sphere of category management.

4. Category managers as qualified, well-paid professionals should enjoy a high level of freedom in their decision-making.

5. Category management principles are applied less frequently in the numerous single-industry towns ("monotowns") and closed towns of the region due to the specific mentality of the people in these towns.

Ural Federal District: main characteristics

According to the data of the Federal State Statistics Service as of 19.02.2019, the Ural Federal District occupies 10.6% of the territory of Russia and accounts for 8.4% of the population. According to the structure of the main macroeconomic

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indicators for federal districts in 2018, the Ural Federal District occupies the first place in mining 36.8%; the fourth place in manufacturing-12.3%; the third place in provision of electricity, gas and steam; the third place in air conditioning-12.7%; the third place in water supply, sanitation, organization of collection and disposal of waste, elimination of pollution – 13.3%; the sixth place in agriculture – 6.2 %; the second place in equity investment – 19.1%; the second place in financial investment – 7.4%; and the sixth place in retail turnover – 8.6% (see Table 3).

Table 2

Description of retailers

Retailer	Stores	Field	Regional representation	Quantity of stores
Monetka[1]	Discount stores	Food, essential goods, products of the retailer's own production and own trademarks	Sverdlovsk region, Chelyabinsk region, Tyumen region, Kurgan region, Tomsk region, Perm region, Republic of Bashkortostan, Siberian Federal District, Khanty-Mansi Autonomous District, Yamal-Nenets Autonomous District	1,040
Rait[2]	Hypermarkets	Food, commodities, products of the retailer's own production and own brands	Sverdlovsk region, Tyumen region, Khanty-Mansi Autonomous District, Republic of Bashkortostan	30
Yabloko[3]	Supermarkets	Food, consumer goods, products of the retailer's own production	Ekaterinburg	13
Optima[4]	Supermarkets	Cosmetics, perfumery, household chemicals, household goods	Ural Federal District: Sverdlovsk region, Khanty-Mansi Autonomous District, Yamal-Nenets Autonomous District	123
Plus[5]	Supermarkets	Household goods, household chemicals, perfumery, cosmetics, engineering, tableware, leather goods, knitwear, toys, gardening tools and products, stationery, home care products	Sverdlovsk region, Chelyabinsk region, Perm region	78
Kvartal[6]	Supermarkets	Perfumery, cosmetics, household chemicals, electrical engineering, tableware, leather goods, knitwear, toys, gardening tools and products, stationery	Ekaterinburg	6
Pygmalion[7]	Supermarkets	Cosmetics, perfumery, toys, knitwear, hosiery, dishes, household chemicals	Ekaterinburg	3
Galamart[8]	Supermarkets	Consumer goods: gardening tools and products, pet products	Russia	200
Anster[9]	Pet stores	Pet food, accessories, aquariums, birds, fish, live plants, animals and reptiles	Sverdlovsk region	30

Note: [1] http://www.monetka.ru; [2] http://raitfresh.ru; [3] http://www.tc-apple.ru; [4] https://vk.com/optimaekb; [5] https://vk.com/plusekb; [6] https://www.rabota66.ru/vacancy/company/21765631; [7] http://qlaster.ru/enterprises/detail/71823; [8] https://galamart.ru; [9] http://anster.ru

Table 3

Retail turnover in Russian regions, 2016–2018

District	Turnover, mln.rubles			Growth (in comparable prices), %			Total, %		
	2016	2017	2018	2016/2015	2017/2016	2018/2017	2016	2017	2018
Central	9,531,830	10,140,136	10,881,600	95.6	102.3	104.0	34.0	34.0	34.5
Northwest	2,742,437	2,922,979	3,074,300	98.3	102.8	102.4	9.7	9.8	9.7
South	2,994,484	3,120,255	3,288,900	98.5	101.0	103.5	10.6	10.5	10.4
North Caucasus	1,538,028	1,620,758	1,599,800	95.4	101.7	97.4	5.4	5.4	5.1
Volga	4,977,617	5,219,930	5,545,400	96.2	102.1	103.9	17.6	17.5	17.6
Ural	**2,475,431**	**2,555,718**	**2,706,800**	**92.9**	**99.5**	**103.5**	**8.7**	**8.6**	**8.6**
Siberian	2,797,008	2,918,494	2,713,000	95.5	101.4	102.2	9.9	9.8	8.6
Far Eastern	1,248,760	1,315,065	1,738,200	97.7	102.0	103.0	4.4	4.4	5.5
Russia	**28,305,600**	**29,813,300**	**31,548,000**	**95.4**	**101.3**	**102.6**	**100.0**	**100.0**	**100.0**

Source: Federal State Statistics Service, February 19, 2019.

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Thus, retail trade in the Ural Federal district in 2018 demonstrated positive dynamics with figures above the national average. Sverdlovsk (3.6%) and Chelyabinsk regions (1.6%) are the most important regions of the district. Smaller, but also very important regions are the Khanty-Mansi Autonomous District (1.3%) and Tyumen region (1,2%). Somewhat less impressive figures in terms of the volume of retail trade are demonstrated by Kurgan region and the Yamalo-Nenets Autonomous District (see Table 4).

As of January 1, 2019, Russia has 40 closed administrative-territorial formations or "closed towns", which include ten closed nuclear cities, five of them in the Urals. Another group of cities consists of the so-called "monotowns" or single-industry towns, which constitute another characteristic feature of the region. According to the Federal State Statistics Service, as of 19 February 2009, the retail trade turnover in 2018 increased in comparison with 2017 by 3.5% and amounted to 2706.8 billion rubles. Per capita sales of goods amounted to 219.1 thousand rubles (on average in Russia, 214.9 thousand rubles). At the same time, per capita income, which determines the standards of living in the region amounted to 33,254 rubles per month in the Urals, compared with the average Russian indicator of 32,598 rubles per month. At the same time, the overall consumer spending in the Urals was 24,054 rubles per month, while the national average indicator is 23,465 rubles per month. Thus, it can be concluded that the population of the Urals has incomes above the average Russian level.

In the Urals, there is a number of institutions of higher education and research institutions such as the Ural Federal University, the Ural State University of Economics and the Institute of Economics of the Ural Branch of the Russian Academy of Sciences. These institutions provide ample opportunities for specialist training.

Category management in the Urals: comparative analysis

For our research, we conducted a questionnaire survey among category managers of nine local and regional retailers operating in the Ural Federal District (see Table 5).

Table 4

Retail turnover in the Ural Federal District, 2016–2018

District	Turnover, mln.rubles			Growth (in comparable prices), %			Total, %		
	2016	2017	2018	2016/2015	2017/2016	2018/2017	2016	2017	2018
Russia	**28,305,600**	**29,813,300**	**31,548,000**	**95.4**	**101.3**	**102.6**	**100,0**	**100,0**	**100,0**
Ural Federal District	**2,475,431**	**2,555,718**	**2,706,766**	**92.9**	**99.5**	**103.5**	**8.7**	**8.6**	**8.6**
Kurgan region	104,329	108,662	114,624	91.7	100.3	102.3	0.4	0.4	0.4
Sverdlovsk region	1,054,177	1,078,234	1,130,702	94.5	98.5	102.3	3.7	3.6	3.6
Khanty-Mansiysk Autonomous District-Ugra	366,782	394,613	420,592	91.0	102.2	103.7	1.3	1.3	1.3
Yamalo-Nenets Autonomous District	122,658	127,666	138,460	88.5	101.1	105.2	0.4	0.4	0.4
Tyumen region	333,808	354,135	383,777	94.7	102.0	106.6	1.2	1.2	1.2
Chelyabinsk region	493,676	492,409	518,609	90.5	97.5	103.7	1.7	1.7	1.6

Source: Federal State Statistics Service, February 19, 2019.

Table 5

Survey of category managers

№	Category management elements	Monetka	Yabloko	Rait	Optima	Plus	Kvartal	Pygmalion	Galamart	Anster	Idealretailer
1	The main focus is on the consumer	1	1	1	2	1	0	0	2	1	2
2	Long-term and mutually beneficial cooperation of all supply chain participants	1	1	1	2	0	0	0	1	1	2
3	Product categorization	2	2	2	2	2	0	0	2	2	2
4	Categories are managed as business units	1	1	1	1	1	0	0	1	1	2
5	Category managers are responsible for specific categories of products	1	1	1	1	1	1	1	1	1	2
6	The purpose of products procurement	1	1	1	2	1	0	0	1	1	2
7	Marketing-mix	2	2	2	2	1	1	1	2	2	2
8	Availability of high-quality data analysis system	0	0	0	1	0	0	0	0	0	2
	Total	9	9	9	13	7	2	2	10	9	16
	Total, %	56	56	56	81	44	13	13	63	56	100

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Most Ural retailers sell products of different categories and do not have a pronounced specialization. Therefore, to avoid any misunderstanding, respondents were asked to specify the main product categories that they manage.

1. The retailer "Monetka" scored 9 points out of 16 (56%). This indicates the average degree of category management prevalence in the trading network. In general, the managers of this retail actively work with the assortment; the product categories are based on the consumer needs; the assortment is regularly reviewed, analyzed and rotated. Category managers monitor market trends, analyze statistical data from both internal and external sources (in particular, the data from the AC Nielsen), and actively work with all the "4P" concept principles. However, the company's weakness is reporting as it requires category managers to spend a lot of time obtaining the necessary information. Despite the fact that all strategic decisions are made at the head office, in general, the company is more focused on the tactical unit of category management implementation and tends to make decisions that allows it to get results only for short-term periods rather than trying to forecast any long-term developments. In addition, in the work of category managers, a great emphasis is placed on receiving compensation payments from suppliers, which significantly distorts the essence of category management (the focus from consumers' needs shifts to receiving payments from suppliers). The responsibility and decision-making power of category managers is limited.

2. The retailer "Yabloko" also scored 9 points out of 16 (56%), which is a fairly good result of a medium-level regional retailer. In general, the company is actively working on all the "4P" concept principles, especially in terms of relationships with its suppliers and the focus on the consumer. However, the lack of high-quality data analysis significantly complicates the work of the company's employees. Category managers seek to get the highest possible payments from the suppliers, which affects the final result of their work and shifts the focus from consumer needs to obtaining additional profit from suppliers.

3. The retailer "Rait" received 9 points out of 16 (56%). In general, the retailer is actively implementing the framework of the "4P" concept, monitors market trends and its competitors' activities. Similar to other Ural retails, its weakness lies in the sphere of reporting as it requires category managers to manually process large amounts of data. The retailer is more focused on tactical activities and is more interested in obtaining results in the short term. In addition, category managers, similar to the case of "Monetka", are motivated to receive marketing payments from suppliers, which significantly reduces the effectiveness of category management. The responsibility and decision-making power of category managers is limited.

4. The retailer "Optima" scored 13 points out of 16 (81%) and shows the highest results in terms of category management implementation. The company strives to take into account and analyze all the customer's needs. The category managers seek to increase the company turnover and profit by enhancing customer satisfaction. The retailer seeks to provide the most favorable prices and the highest level of customer service. The weak points in this case are the need to improve the data analysis system and limited freedom of category managers in their strategic and tactical decision-making.

5. The retailer "Plus" scored only 7 points out of 16 (44%). In this company, category management principles are not applied systematically. Category managers' responsibility is still significantly limited and the company is still trying to restructure its activities to focus on the consumer. The same applies to the company's relations with its suppliers. Nevertheless, it should be noted that the company has sufficient potential for further development since, in a relatively short time period, it has managed to produce some good financial results [9; 10].

6. The retailers "Kvartal" and "Pygmalion" scored 2 points out of 16 (13%), which means that the level of category management is quite low in these companies. To date, these retailers are a classic version of "traditional retail". They need to invest additional resources to implement the principles of category management more actively.

7. The retailer "Galamart" scored 10 points out of 16 (63%). The company is quite active, placing great emphasis on all the principles of the "4P" concept, focuses on consumers, regularly monitors all market trends, quickly and efficiently adapts to changing customer needs. However, category managers do not have full freedom in their decision-making and are working more as purchasers rather than as category managers. There is also a problem with the data processing system, which prevents category managers from promptly obtaining the necessary information.

8. The retailer "Anster" scored 9 points out of 16 (56%). The retailer has good results in terms of

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category management. At the same time, its category managers do not have the necessary freedom of decision-making and many management processes are still in their initial phase. However, at the moment, the retailer is actively seeking ways to implement category management principles.

The research confirms that today Ural retailers tend to use category management principles more or less actively and manage to achieve some positive results. In its pure form, category management is not used in any of the analyzed retailers, but some elements of this approach are applied by absolutely all retailers (see Table 6).

Let us now look at specific elements of category management. As far as the focus on the consumer is concerned, we found that 22% of retailers are really focused on the needs of their customers and seek to identify and satisfy their consumers' needs. 56% of respondents pointed out that the retailers are focused on consumer needs, but not fully, acting in certain situations to the detriment of consumer interests and prioritizing short-term results. In 20% of the cases, there was no goal-setting to satisfy consumer needs while the main goal was to make a short-term profit in the absence of long-term strategic planning.

As for building long-term and mutually beneficial relations with other participants of the supply chain, 63% of retailers are on the way to establishing long-term relations with their partners, but none of them feels that it is their main priority. 38% of retailers do not have a specific goal to move in this direction.

More than a half (78%) of retailers apply the principle of product categorization while 22% do not consider it appropriate.

At the same time, if we look at the categories that require full management at all stages of work, we shall see that in 78% of cases, this principle is applied only partially and the decisions are often made without taking into account the specifics, roles, strategies and tactics of each individual category. 22% of retailers do not consider product categories as business units at all.

All category managers we interviewed said that they are responsible for specific product categories, but only in 10% of retailers, category managers are fully responsible for their product categories and enjoy complete freedom in their decision-making. 90% of respondents indicated that to some extent they have freedom in their decision-making, but most of their decisions still require additional coordination with their superiors. In all retailers, functions of related departments overlap, which generates conflict and decreases employees' efficiency.

As for product purchasing, 11% of respondents pointed out that they seek to maximize sales by satisfying their customers' needs. In 67% of cases, managers quite often face the need to fill the warehouses / shelves of the retailer in order to receive marketing payments. In 22% of retailers, procurement activities are focused on receiving marketing payments.

The data show that most retailers adhere to the "4P" principles because this element of category management is tactical in nature and allows to achieve short-term results relatively quickly. 67% of the retailers we surveyed use marketing-mix, 33% of retailers try to improve their business by applying the marketing-mix principle, but do not use its full potential.

Most retailers lack quality systems of information collection, which would enable their category managers to make decisions faster and better. Only 10% of respondents said that they have

Table 6

Comparative analysis of category management application in Ural retail

Category managements elements	0 retailers	1 retailer	2 retailers	Total number, retailers	0, %	1, %	2, %
The main focus is on the consumer	2	5	2	9	22	56	22
Long-term and mutually beneficial cooperation of all supply chain participants	3	5	0	8	38	63	0
Product categorization	2	0	7	9	22	0	78
Product categories are managed as business units	2	7	0	9	22	78	0
Category managers are responsible for specific categories of products	0	0	9	9	0	0	100
The purpose of product procurement	2	6	1	9	22	67	11
Marketing-mix	0	3	6	9	0	33	67
Availability of high-quality data analysis system	8	1	0	9	89	11	0
Total	19	27	25	71	27	38	35

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access to such systems, which make it easier for them to analyze information. 80% of respondents find the data processing system they use inadequate and pointed out that they have to process the information manually. It is obvious that the introduction of information systems is expensive, but the results are likely to be sufficient to cover the costs of such systems. In general, we can conclude that the potential of modern data processing systems is largely underestimated by most Ural retailers.

Thus, we found that all Ural retailers use some of the elements of category management. Large retailers seek to introduce modern approaches, implement category management principles at the level of 56-81%. Medium-sized retailers tend to follow suit as category management is prevalent at the level of 44-56%. Small retailers occasionally 'copy' the actions of their competitors, but elements of category management are used only at the level of 13%. This refutes hypothesis 1 that all retailers, regardless of size, strive to survive and implement the most modern approaches and techniques that can increase the company's income and attract more regular and loyal customers. Despite the high level of competition, a major role in the willingness to implement category management is played by the retailers' size, their market share and available resources.

The results show that category management is mostly prevalent in the sphere of consumer goods, as well as industrial products, cosmetics and perfumes (63–81%), the medium level is demonstrated by food and pet retailers (56%). This does not support hypothesis 2.

An interesting fact is that the category managers who participated in this survey do not have special professional education in the field of category management and none of the respondents knows the methodology very well, although the respondents are aware of certain elements and stages of category management. Specialists mostly gain their knowledge by adopting the experience of their colleagues or learning at work, "by trial and error". Thus, hypothesis 3 is not confirmed. We may suppose, however, that retailers might be able to improve their performance by investing in their personnel training.

Contrary to assumptions, most category managers reported that they had a low level of freedom in their decision-making. Thus, hypothesis 4 is also not confirmed. Most strategic and tactical decisions are taken at the level of the owner or the department head. In addition, as many respondents pointed out, they need to coordinate a number of decisions with employees of related departments, which contradicts the principles of category management. In most of the cases (90% of respondents), the main task of category managers is to control all processes within the category and deal with current problems. Category managers do not have enough resources to solve strategic issues. However, according to category management theory, a category manager should act like an entrepreneur and manage a category as a business unit, making all strategic and tactical decisions within the category. Therefore, by depriving category managers of the ability to fully manage categories, to make decisions and be responsible for them, trading companies do not use the potential of this approach to the full.

Regarding hypothesis 5 – the presence of a large number of single-industry towns and closed cities in the region complicates the process of implementing category management – we can conclude that this hypothesis is only partially confirmed. In closed towns category management appears to be the most effective as the population generally enjoys higher incomes and is more open to change.

Financial results of category management implementation in single-industry towns turned out to be minimal. The main reason is the limited financial capacity of the population.

Summing up, we can conclude that category management principles are implemented by Ural retailers but to a different extent. The largest market players apply these principles more actively because they have a greater negotiating power, increased ability to control the conditions for the implementation of this approach, and more resources for training their employees, monitoring and following the latest market trends. Ural retailers mostly use category management methods in combination with other methods rather than in their pure form.

Conclusion

We share the widely spread opinion that in the context of globalization and increasing competition, no trade company has all the necessary resources to create, maintain and develop a sustainable competitive advantage on a global scale [12ae]. Thus, any company's important competitive advantage lies in the development of long-term and mutually beneficial relationships with

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partners in the supply chain. Category management is developing within the framework of this model.

As a result of our research, it can be concluded that in the Ural Federal District, which is an economically developed region, retailers actively implement category management principles, although they do not use all the elements and prefer mixed forms of management. This to a great extent depends on the size of the retailer, its market share and the available resources. At the same time, regardless of the sphere of trade, category management mostly prevails in the so-called "closed" cities. Category management principles are applied least frequently in single-industry towns or "monotowns".

We found that category managers participating in our survey did not have any specialized professional training in category management and, as a result, did not enjoy sufficient freedom in their decision-making. It can be supposed that the region experiences shortages of category management staff or that retailers are unwilling to invest in training their employees in this field and are looking for "ready-made" specialists.

From a theoretical point of view, the significance of this article is to highlight the eight category management elements.

The practical significance of this research is that it allows us to identify the regional features of category management in the retail sphere. We believe that the Ural region holds considerable potential for further development of trade in this sphere and that category management will help local and regional companies maximize their profits.

Further empirical research, using both quantitative and qualitative methods, is needed to confirm the effectiveness of this approach. It would be particularly beneficial to analyze retailers' activities in various Russian regions within the described category management framework.

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