

# Evaluating Business Attractiveness of Cities by Considering the Human Resource Management for Supply Chains in Cities More Than Million Population in Russia

Alina Marselevna Khamidulina<sup>1</sup>, Ruslan Raisovich Sadyrtidinov<sup>1</sup>, Galina Alekseevna Suldina<sup>2</sup>,  
Svetlana Aleksandrovna Vladimirova<sup>2</sup>

<sup>1</sup>Kazan Federal University

<sup>2</sup>Moscow Metropolitan Governance University

s\_ryslan@mail.ru

**Abstract**— today, cities become centers of entrepreneurial activity and innovation development, the main driving force. Business chooses the territory where there are the best conditions for the development and further successful functioning, as well as guarantees of profit. It can be achieved by the human resource management based on the supply chain strategies. That is why large cities nowadays are becoming competitors for the most successful entrepreneurs. Attracting business directly depends on the effective use of the full potential of the city territory, as well as on designing the effective municipal policy for attracting business, taking into account city's strengths and weaknesses. In order to evaluate city attractiveness for business in Russia the authors collected a database consisting of a set of indicators over a period of five years (2013-2017). A comprehensive and detailed evaluation of each of the indicators made it possible to identify the strengths and weaknesses of each selected city and compare the data obtained by translating the values into indices. It allows us not to focus on the study of each city in isolation, but to compare them with each other, to reveal competitive advantages. Based on the integral index of business attractiveness, the following groups of Russian cities are distinguished: cities leading for business attractiveness (Yekaterinburg, Krasnoyarsk, Kazan), cities middling for business attractiveness (Ufa, Nizhny Novgorod, Rostov-on-Don, Perm, Novosibirsk, Samara, Chelyabinsk), cities-outsiders for business attractiveness (Voronezh, Volgograd, Omsk).

**Keywords**— business, attractiveness, evaluation, city, supply chain, Human resource.

## 1. Introduction

Today, cities become centers of entrepreneurial activity and innovation development, the main driving force. Each of the cities is unique in its own way, combining the availability of diverse

resources, technologies, and potential opportunities. The task of the local authorities is to promote the maximum disclosure and development of these opportunities in order to meet all needs of business. Business chooses the territory where there are the best conditions for the development and further successful functioning, as well as guarantees of profit. That is why large cities nowadays are becoming competitors for the most successful entrepreneurs.

Attracting business directly depends on the effective use of the full potential of the city territory, as well as on designing the effective municipal policy for attracting business, taking into account city's strengths and weaknesses. At the same time in Russia there is no unified approach to the concept of city attractiveness for business, which leads to different interpretations [1-5].

The main recipients of international flows are global cities. Pilka & Sluka define some key factors that determine city's attractiveness for foreign multinationals: its geo-economic power, functional specialization, location, historical and cultural ties, position in different sectoral markets [1, 6-9]. Antiroiko argues that attraction-oriented development strategies aim at effective absorption of external resources from the global space of flows. It is assumed that such competition is risky and may lead to a race to the bottom. Therefore the emphasis is put increasingly on less costly and more synergistic city marketing, which utilizes city branding and city profiling that aim at attract high value-adding services or high-tech firms [2, 10-14]. In another paper the factors affecting companies' relocation decisions are analyzed. 21 counties in New Jersey represent the "destinations" for the new businesses, and New York City and Philadelphia represent the "origins". Set of factors that are considered to affect companies' relocation decisions include land prices, safety, land availability, market size, economic stability, and transportation accessibility [3, 15]. Gundersen et al. mention among the main factors for city

attractiveness and industrial development accessibility and the transport system. Several other location factors related to labour, land, capital, and managerial and technical skills will also shape firm's locations and city attractiveness and competitiveness [4, 10-13].

Budnikevych and Gavrysh note that one of the elements of the development strategy is marketing policy of the city attractiveness, which is a number of measures aimed at attracting investment. Marketing instruments ensure long-term relations, helping to increase and transform the city image, provide loyalty of all the stakeholders. They are one of the most complex and effective mechanisms of formation and increase of the city attractiveness, its promotion in internal and external social-economic environment [5, 16, 17]. These studies are very useful for Russian cities, that want to increase their attractiveness for business.

## 2. Methods

In order to analyze the city attractiveness for business in Russia 13 cities with the population more than one million people were selected. The cities Moscow and Saint-Petersburg were excluded from the research because they are endowed with the status of a state (region). So, it is incorrect to use them for comparison with other cities which are municipalities. Within this research the city attractiveness for business is estimated using following indicators:

- the proportion of the workforce in the city population;
- fixed capital investment in the city per capita;
- city budget revenues per capita;
- retail trade in the city per capita;
- the commissioning of fixed assets in the city;
- average monthly salary in the city;
- the share of unemployed citizens who applied to the employment service in the total city population;
- the volume of services in the city per capita, in rubles.

For comparison of indicators in different units of calculation, rationing is carried out. The maximum-minimum method was used for this purpose. This method is one of the most easiest to use and consists in equating the maximum and minimum values for all private indicators in order to eliminate all differences in the spread of indicator values. The calculation of the normalized indicator can be represented in equation 1 as the ratio between the difference of the selected indicator with the minimum and the difference of the maximum indicator with the minimum:

$$\bar{X} = \frac{x - x_{\min}}{x_{\max} - x_{\min}}, \quad (1)$$

where  $X$  is the value of the indicator;

$x_{\max}$  - the maximum value of the indicator;

$x_{\min}$  - the minimum value of the indicator.

The advantage of this technique is that the variation in the values of the indicators persists. So, the nature of the differences in the studied indicators is reflected absolutely adequately. In addition, this method is convenient when it is necessary to identify the leader in a particular field or a certain indicator. After that, an integral indicator of

business attractiveness ( $X_{int}$ ) for each city is calculated, using equation 2. It is achieved by finding the average values of the indicators for the research period in all selected cities.

$$X_{int} = \sum X_i, \quad (3)$$

where  $X_i$  is the value of the  $i$ -th indicator.

After all calculations the ranking of cities is made in order identify the competitive advantages and weaknesses of each of them. The data on these indicators were taken from municipal statistics, the Federal State Statistics Service of the Russian Federation [6-10] and the official web portals of the cities.

## 3. Results and Discussion

According to authors methodology selected indicators were collected for the period 2013-2017 years for all Russian cities with the population more than one million people. The first private indicator of city attractiveness for business is the share of the workforce in the total population. This indicator is important for entrepreneurs, firstly, because of labor opportunities. Secondly, it reflects the potential effective demand that can be achieved in this area. High rates are in Krasnoyarsk and Rostov-on-Don, the other cities do not exceed the bar of 60%. An alarming trend is characteristic of all selected cities: with an annual increase in the total population, the share of the workforce in it is decreasing. The growth rates of the older population far exceed those of the population under the working age.

The next private indicator included in the rating is investment in fixed assets per capita. This indicator is a mandatory part of any rating relating to entrepreneurial activity or the attractiveness of the territory as a whole. The more investments, the more attractive the territory for the development of the business. The leader in 2017 is city Kazan with

more than 90000 rubles of investments in fixed assets per capita. More than 80000 rubles per capita is also observed in cities Ufa, Perm, Voronezh, and Volgograd. City-outsider is Novosibirsk, partly due to the largest population among the selected cities. During the research period each city developed in its own way. In Novosibirsk, investment in fixed assets increased in the period 2013-2015, and dropped sharply in the period 2015-2017. The situation is similar in Perm, where by 2015 the indicator reached a maximum of 108300 rubles per capita, and fell sharply in the following year to 78900 rubles. City Volgograd holds the unique position, where investment increased almost twice for the period 2013-2017. In other cities, the indicator remained stable with small fluctuations.

The third private indicator in our methodology is budget revenues per capita. This indicator is designed to assess the financial security of the city, depending on how many people live on it. Leading cities here are Rostov-on-Don, Chelyabinsk and Yekaterinburg. In addition to them, more than 25000 rubles per person are in budgets of such cities as Nizhny Novgorod and Krasnoyarsk. We can note that the cities-leaders annually increase their budget revenues so much that, even with a simultaneous increase in population, the indicator still continues to grow. Cities Kazan, Voronezh and Omsk have the worst results for budget revenues per capita. In Omsk as the city with the lowest rate the situation was gradually improving during research period. In city Kazan the situation worsened. In city Voronezh indicator value was increasing by an average of 2000 rubles per capita every 2 years during the research period. Similar growth rates are in city Volgograd, which is in the middle of the rating.

The fourth indicator of the business attractiveness rating is the average monthly salary. Mandatory indicator for any entrepreneur. This indicator positively affect city attractiveness for business, even despite the fact that not every entrepreneur will be able to provide high salary. The main reason is that it is, first of all, an indicator of effective demand. The city-leader in terms of wages for the entire research period is Ekaterinburg. More than 40000 rubles can be offered as an average monthly salary in the cities Novosibirsk, Nizhny Novgorod, Kazan, Rostov-on-Don, Ufa, Krasnoyarsk and Perm. It should be noted that in all cities with a population of more than one million people the average salary is not less than 30000 rubles per month.

The proportion of unemployed who applied to the employment service in the total population is taken as fifth indicator. Its impact to city attractiveness for business is similar with the first considered indicator (the share of the workforce in city population) and the fourth one (the average monthly wage). Those who applied to the employment service are potential workforce for

new businesses. The largest proportion of those who applied to the employment service in 2017 was registered in Voronezh, where the figure is more than 0.5% of the total population. The level of 0.47 % and 0.45 % is noted in city Ufa and city Perm, respectively. In city Rostov-on-Don in 2017 only 0.26 % of the total population applied to the employment services. In other cities, this value ranges from 0.3-0.5%. In dynamics within the research period the maximum value of the indicator among all cities was reached in 2015 in Perm and amounted to 0.71% of the population. The lowest value of 0.17 % was observed in 2013 in Omsk.

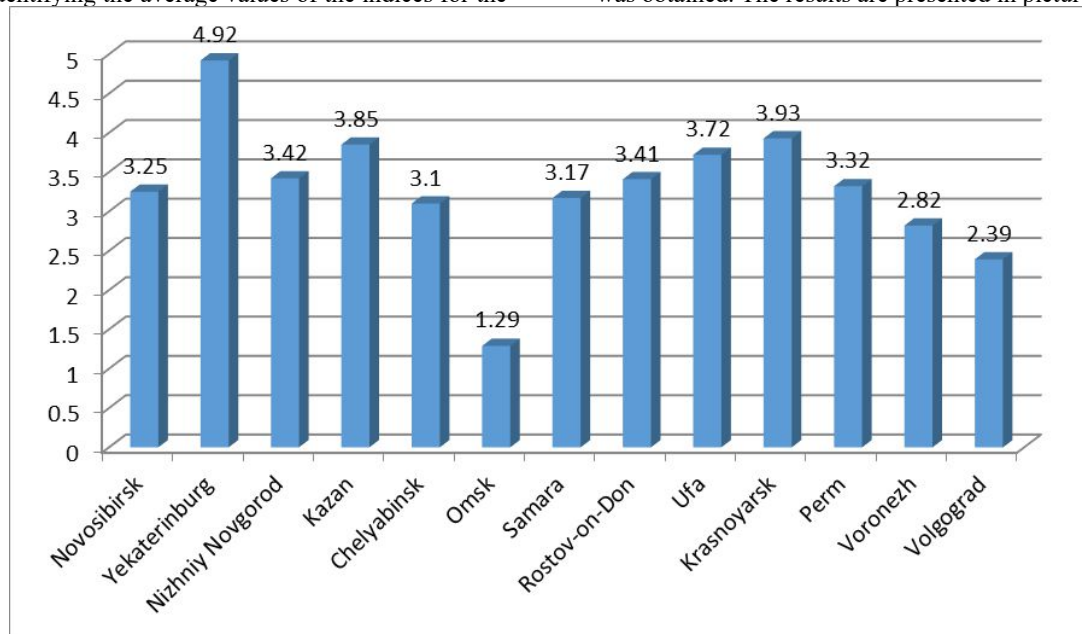
The next chosen indicator as a factor of city attractiveness for business is the commissioning of fixed assets. At its core, it shows the amount of production facilities ready for use and further operation. The higher this indicator is, the more territory of the city is attractive for business. In 2017, city Yekaterinburg became the leader in terms of this indicator with the value exceeding 140 billion rubles. It is also worth noting the high values of such cities as Kazan, Samara, Krasnoyarsk and Rostov-on-Don. During the period 2013-2017, the values of this indicator were reduced in cities Novosibirsk, Omsk and Nizhny Novgorod. The reverse trend is observed in cities Samara, Yekaterinburg, Kazan. In city Volgograd in 2016-2017 the commissioning of fixed assets decreased more than twice. The situation is similar in city Rostov-on-Don for the period 2015-2016.

The seventh indicator in the methodology is the retail trade turnover in the city per capita. The higher the indicator, the more actively the trade goes, which means that the chances of selling own products, on average, also increase. City Ekaterinburg is the leader. Its retail trade turnover per inhabitant exceeds 160000 rubles. City Kazan is in second place, and Nizhny Novgorod is in third place. If we consider the dynamics of changes in this indicator in the period 2013-2017, then absolutely in all the cities the retail trade turnover per capita increases, despite the steady increase in population. At the same time, in such cities as Yekaterinburg, Nizhny Novgorod, Chelyabinsk, Perm and Volgograd the growth of the indicator occurs annually. For other cities, periods of decline are noted.

The last indicator in the methodology is the volume of services per capita. High rates are observed in cities Yekaterinburg and Kazan. The remaining cities do not exceed the figure of 50000 rubles per capita. In the dynamics the situation in city Volgograd is particularly prominent. In 2013, the volume of services per capita was only 29900 rubles, which was the lowest amount for the period 2013-2017. However, by 2017, city Volgograd ranks third with a score of 50900 rubles per capita. Other cities during this period remained almost at the same level, only slightly improving or worsening their performance.

Then all indicators were normalized to indexes using the method of maximum-minimum. After identifying the average values of the indices for the

period 2013-2017 and summing them together, a final ranking of the city attractiveness for business was obtained. The results are presented in picture 1.



**Picture 1.** Ranking of cities according to the integral business attractiveness index

Thus, the evaluation of business attractiveness index determines the current state of city. And private indicators can help to identify the advantages, disadvantages and current problems of the cities. A system update of the information for calculating the index will allow to develop qualified solutions for the development of cities at the federal, regional and municipal levels, to

evaluate the effectiveness of programs and projects already being implemented in this area.

#### 4. Summary

Cities -leaders and cities-outsiders for each private indicator are presented in table 1.

**Table 1.** Cities-leaders and cities-outsiders in attractiveness for business

Indicator	City-leader	City-outsider
Proportion of the working age population in the total population	Krasnoyarsk	Volgograd
Capital investment per capita	Perm	Novosibirsk
Budget revenues per capita	Rostov-on-Don	Omsk
Average monthly salary	Yekaterinburg	Volgograd
The share of unemployed who applied to the employment service in the total population	Ufa	Omsk
Commissioning of fixed assets	Yekaterinburg	Omsk
Retail turnover per capita	Yekaterinburg	Omsk
The volume of paid services per capita	Nizhny Novgorod	Perm

#### 5. Conclusions

A comprehensive and detailed evaluation of each of the indicators made it possible to identify the strengths and weaknesses of each selected city and compare the data obtained by translating the values into indices. It allows us not to focus on the study of each city in isolation, but to compare them with each other, to reveal competitive advantages.

Based on the integral index of business attractiveness, the following groups of Russian cities are distinguished:

- cities leading for business attractiveness: Yekaterinburg, Krasnoyarsk, Kazan;
- cities middling for business attractiveness: Ufa, Nizhny Novgorod, Rostov-on-Don, Perm, Novosibirsk, Samara, Chelyabinsk;
- cities-outsiders for business attractiveness: Voronezh, Volgograd, Omsk.

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