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The Role of the Transaction Costs in the Business Success of Small and Medium Sized Enterprises in Russia

Nikolaeva E.^{a*}, Pletnev D.^a

^a Chelyabinsk State University, Kashirinykh Br. str., 129, Chelyabinsk, 454021, Russia

Abstract

This article represents the results of a study of transaction costs and business success of small and medium sized enterprises. Based on empirical analysis, the authors introduce a comparative description of transaction costs in different sectors of the Russian economy and demonstrate their effect on the business success. The optimal level of cost for the transaction in each particular section is determined using statistical analysis.

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1. Introduction

The Russian economy has been faced with the problem of developing small and medium sized businesses for many years. Scientists, as well as government officials and managers of enterprises, consider supporting small and medium sized businesses as a solution for a variety of social and economic problems. Suggestions and decisions are made concerning the ways of supporting and stimulating entrepreneurial activities in Russia at different levels of public authority. Based on the number of publications by governmental programs and other initiatives in this field (including social ones), this can certainly be considered one of the most pressing issues in our country. Due to their flexibility, fast decision making and high responsibility level, the peculiar features of small and medium sized enterprises are able to become one of the chief locomotives of economic growth. Moreover, the success of

* Corresponding author. Tel.: +7 951 123 0630; fax: +7 351 799 7050.
E-mail address: nikolaeva@csu.ru

entrepreneurial activities is also a factor that helps remove social tension in the country to a certain extent, thanks to the growing employment and income of the people as well as the formation of the “middle class” in society.

According to the restricting or stimulating effect produced on small and medium sized enterprises, at present institutional factors are the most important. A lot of attention has been focused on various issues related to institutional factors and their influence on the efficiency of economic subjects in the works by Rutherford (1995), Coase (2005), Greif (2005), Hodgson (2000), Joskow (2008), Menard (2004), Murrell (2005) and Opper (2008). The authors emphasize the following factors as most relevant: high administrative barriers, artificial barriers forced at the stage of entering a sector, and limited access to financial and informational resources. The presence of the said obstacles and the necessity to overcome them is caused by considerable financial costs; they are usually called transaction costs.

The goal of this article is to study and provide a quantitative description of the effect produced by the institutional environment on indices of success for small and medium sized enterprises. In our study, the index describing the influence produced by institutional factors on an enterprise is calculated to be the level of transaction costs faced by the enterprise when organizing its external and internal operations. More details on the forms and estimation of transaction costs and on the effect they produce on the efficiency of enterprises can be found in works by (Williamson, 1979), (Maher, 1997), (Pessali, 2006), (Whinston, 2001), (Schmitz, 2006), (Bylund 2013) and (Miller, 2014).

Business success has many facets, both in terms of efficiency and stability as well as the ability to grow. A whole series of works, including the articles by (Bullen and Rockart, 1981), (Boyton and Zmud 1984), (Clarke and O'Connor, 2012) have been dedicated to the study of this phenomenon. In this study, we are deliberately focusing on one of the aspects of success, namely the efficiency value of an enterprise. We have selected the economic efficiency of the operating activities as the aspect for our discussion. Having estimated the transaction cost level and compared it to the values of success, i.e. the economic efficiency, we can demonstrate the effect of that factor and suggest our recommendations on optimizing the correlation of those values in a particular enterprise.

2. Methodology and data

In this article, the methods we used to estimate the level of the transaction cost were based on accounting report data. The methods were described and tested earlier in (Pletnev, Nikolaeva and Bitkulova, 2014), and (Pletnev, Nikolaeva and Lushnikov, 2014). Transaction costs of Russian enterprises are extremely difficult to measure directly because accounting mechanisms are not “sharpened” under their identification and assessment at present. In such conditions, a “level” method of assessment for transaction costs of the enterprise is possible. This method uses accounting data. These data are used to produce factors having a connection theoretically grounded with transaction costs. We propose to use three calculated indicators according to the balance sheet and income statement: the proportion of administrative and selling expenses in enterprise revenue, the period of assets turnover, and the share of stocks in the current asset value. Each factor is normalized and the average of the normalized indicators is calculated. The first factor reflects the explicit transaction costs; the other two are implicit factors recorded by the “slowing down” of the enterprise in comparison with its competitors (1):

$$\gamma_j = \frac{1}{\left(1 + \exp\left(-\sum_{i=1}^n \frac{f_{ij} - \bar{f}_i}{\sigma_i}\right)\right)} \quad (1)$$

Wherein,

f_{ij} – i-th value of the indicator (i varies from 1 to 3) for the j-th enterprise;

\bar{f}_i – average value of the i-th sample indicator;

σ_i – standard deviation of the i-th sample indicator.

After the logistic transformation of this function all values convert into a convenient scale from 0 to 1. The closer the value of the transaction costs is to 1, the higher it is to the respective enterprise. Calculated in such a way, the

level of transaction costs can characterize the ratio of transaction costs in various firms and can be used to evaluate changes in transaction costs' level of one enterprise or group of enterprises in dynamics.

The authors have performed an empirical analysis of two values: the transaction cost level and the sales profitability level of an enterprise (i.e. the economic efficiency of the operating activities). The authors have also studied the correlation between those two values, using statistical methods, in particular variance analysis.. The study was carried out for small and medium sized enterprises of the Kurgan Region and the Chelyabinsk Region. Those enterprises operate in sectors which are mainly represented by companies of that size. To perform the analysis, we used the accounting report data from 2013 provided by the First Independent Rating Agency (FIRA, 2014). In the Chelyabinsk Region, the sectors of this kind are: wholesale (144 companies participated in the study), metallurgical production and production of ready-to-use metal products (22 companies) and the construction industry (41 companies). In the Kurgan Region, we selected companies of the construction industry (54 companies), wholesale (58 companies), agriculture (47 companies) and transport and communications (30 companies).

3. Results

First, we calculated the transaction cost level of the companies in this study. The peculiarity of the calculation method allows the comparison of these values for different companies from different industries. Figure 1 show the average transaction cost level in the industries that were analysed. Figure 1 shows that the highest transaction cost level is observed in agriculture (Kurgan Region), which is most likely a negative factor, considering the traditionally low economic efficiency of agricultural companies. The lowest value was determined in the transport and communications sectors (Kurgan Region).

High transaction costs are believed to be one of the reasons for the low economic efficiency of a company and, as a result, for its low success. To verify this hypothesis, we have to compare the values of success and those of the transaction costs for the selected companies. Figure 1 also represents a comparative analysis of the two values: the transaction cost level and the level of the economic efficiency for the operating activities of small and medium sized enterprises of Chelyabinsk Region and Kurgan Region.

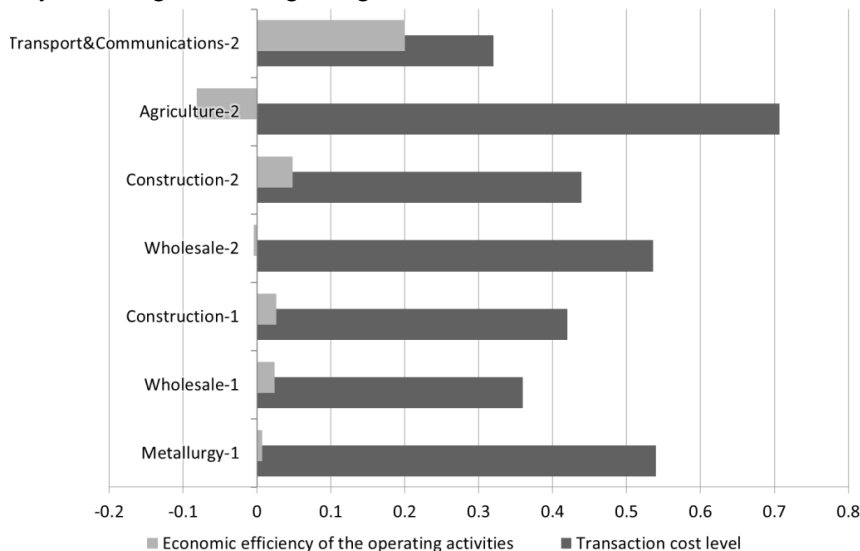


Fig. 1. Comparative analysis of the transaction cost levels and the levels of success of small and medium sized enterprises of Kurgan Region and Chelyabinsk Region (Index 1 indicates Chelyabinsk Region, Index 2 – Kurgan Region).

We can clearly see on the graph that the industries with high average transaction cost levels are characterized with low (metallurgical production, wholesale, construction) or negative (agriculture) economic efficiency of operation.

The transport and communications sector shows the lowest transaction cost level, and thus the economic efficiency is much higher there than in the other sectors. The linear correlation coefficient between the values of all the sectors is -0.83 , which proves that there is a tight negative relation between the transaction cost level and the economic efficiency of the operating activities. However, the correlation values in each of the sectors show that the relation is not so tight as they do not exceed -0.3 .

Then, in order to determine the relation between the transaction cost level and the level of the companies' success, the authors performed a variance analysis which allowed a more detailed description of the relation between the values under study. The variance analysis was made individually for the different industries and regions, and it allowed us to establish some important patterns.

Studying the interrelation between the values allowed us to conclude that there is a significant relation between the two parameters (transaction cost level / economic efficiency of the operating activities). For instance, it was established that in agriculture the variation of the transaction cost level describes 17% of the variation of the economic efficiency level which, as we believe, can be considered a high value. In wholesale and in the transport and communications sectors, the variance value is lower (about 9%) which also demonstrates a pretty high influence. In the construction industry, the variance value is equal to 4%, which means that there is a 4% correlation between the variations of the economic efficiency value and those of the transaction costs.

This analytical grouping reflects the nonlinear relation between the values under study. All the industries show similar dynamics: the economic efficiency of the operating activities keeps growing until the transaction cost level reaches a certain value, and then it begins to gradually decrease and finally it arrives at its minimum when the transaction costs are at the maximum level. The result that we get there allows us to come to an important conclusion: increasing the transaction costs of an enterprise to a certain level will make the economic efficiency grow as well, but no growth of the transaction costs is recommended after that level has been reached. In other words, there is a limit beyond which the efficiency is expected to plummet.

The next stage of the analysis was determining those thresholds for particular industries, comparing them with one another, and developing general recommendations both for the industries and for the groups of small businesses on the whole. Figure 2 represent the analysis performed for the construction sector. It reflects the relation between the transaction costs and the economic efficiency of the operating activities.

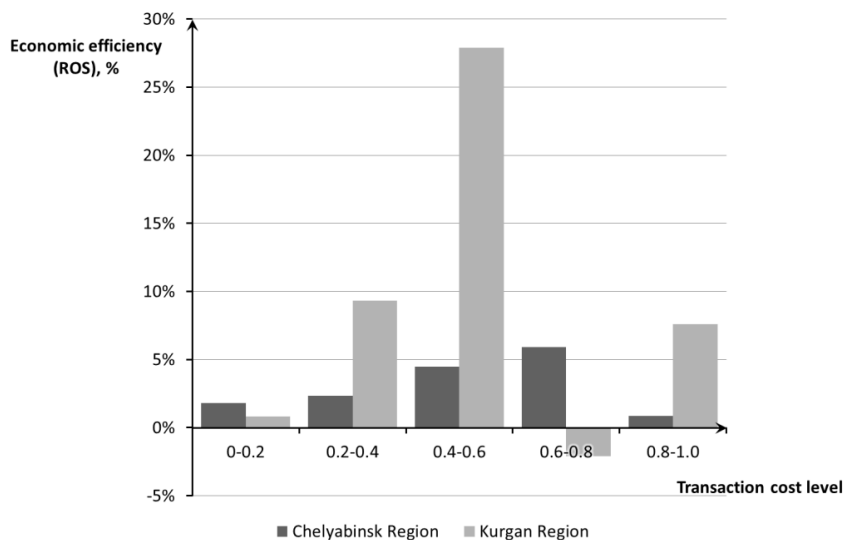


Fig. 2. Analytical grouping of the economic efficiency of the operating activities of the companies in the construction industry according to their transaction costs (Chelyabinsk Region and Kurgan Region).

The graph clearly shows that the operating efficiency grows until the transaction costs reach the level of 0.4 to 0.6 where arrives to its maximum point. Hence, the optimal level (the threshold) of the transaction costs for small enterprises in the construction industry lies somewhere between the values of 0.4 to 0.6. The diagram for the Chelyabinsk Region displays a similar trend. The growth of the operating efficiency is accompanied with the transaction costs growing up to a certain point (the interval is 0.6 to 0.8 there), and then the efficiency goes down drastically at the maximum level of the costs.

In the agricultural sector of Kurgan Region, the highest efficiency is reached by the companies which keep their transaction costs in the median, at the level of 0.4 to 0.6 (Fig. 3).

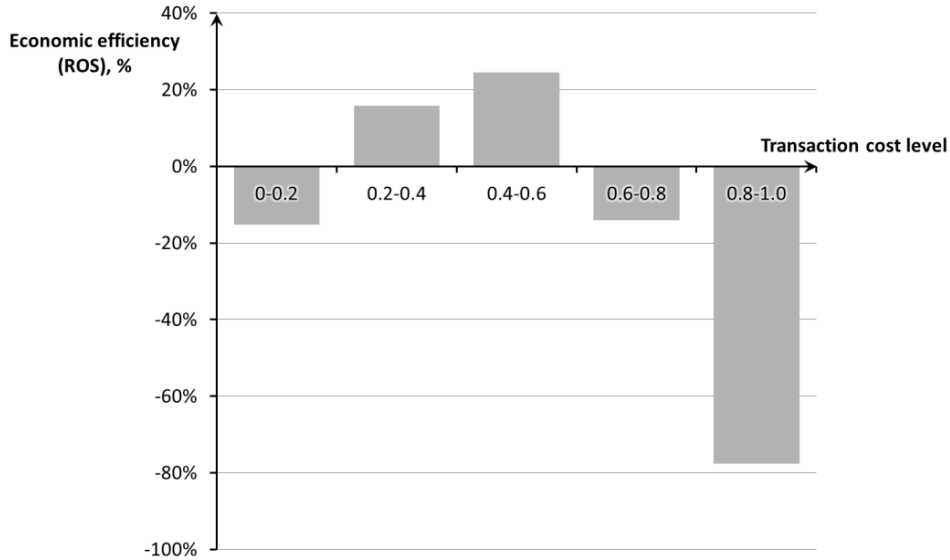


Fig. 3. Analytical grouping of the economic efficiency of the operating activities of the companies in the agricultural sector according to their transaction costs (Kurgan Region).

Some of the agricultural companies (about 20%) have an extremely low economic efficiency of their operating activities, and the majority of them have a higher level of transaction costs (i.e. exceeding 0.6). Figure 4 shows the grouping made according to the transaction cost level in the transport and communications sector of the Kurgan Region. The selection consists of 30 companies showing relatively high economic efficiency values.

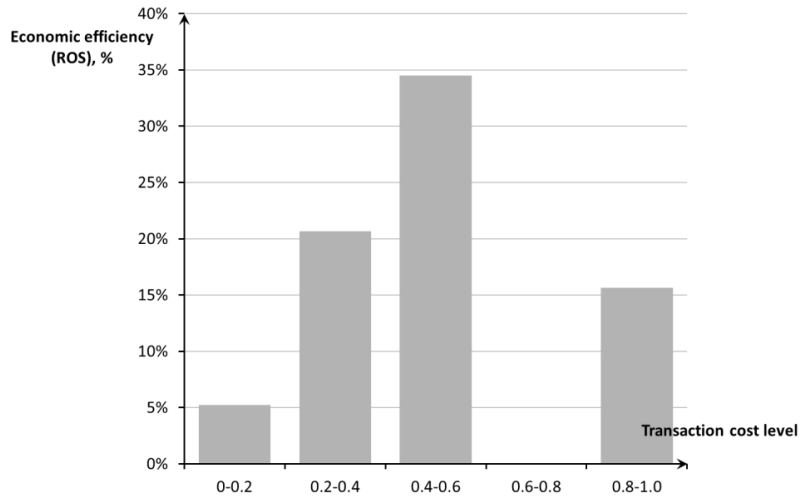


Fig. 4. Analytical grouping of the economic efficiency of the operating activities of the companies in the transport and communications sector according to their transaction cost level (Kurgan Region).

The companies with the highest economic efficiency level (over 30%) are also found in the interval of 0.4 to 0.6, according to their transaction costs. No companies were found in the fourth group (0.6 – 0.8). In general, we can conclude that this sector is the most successful one in Kurgan Region among the sectors with a high share of small and medium sized businesses. The statistical analysis of the data collected for the small and medium sized enterprises producing metal products in Chelyabinsk Region also proves the aforementioned results: the highest economic efficiency of the operating activities is shown by the companies with the transaction cost level of 0.4 to 0.6 (Fig. 5). The majority of the companies selected for this study are also found in the group. However, we have to mention that on average this sector is characterized by a low level of operating efficiency (less than 4%).

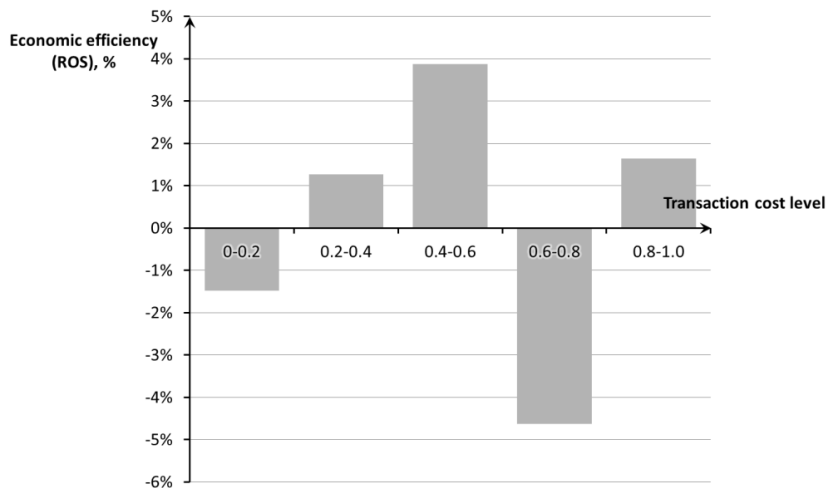


Fig. 5. Analytical grouping of the economic efficiency of the operating activities of the companies in metallurgical production and production of ready-to-use metal products according to their transaction cost level (Chelyabinsk Region).

The same kind of analysis that we made in the wholesale sector of Kurgan Region and Chelyabinsk Region verifies our general conclusion that the operating efficiency improves together with the transaction cost level up to a certain limit. In the Kurgan Region, this transaction cost threshold value was also in the 0.4 to 0.6 range, while it was 0.2 to 0.4 in Chelyabinsk Region (Fig. 6). Among the 122 wholesale companies that we studied in the Chelyabinsk Region, the majority hardly reached an operating efficiency level of 3%, and only 18 companies worked with the efficiency slightly exceeding 6%.

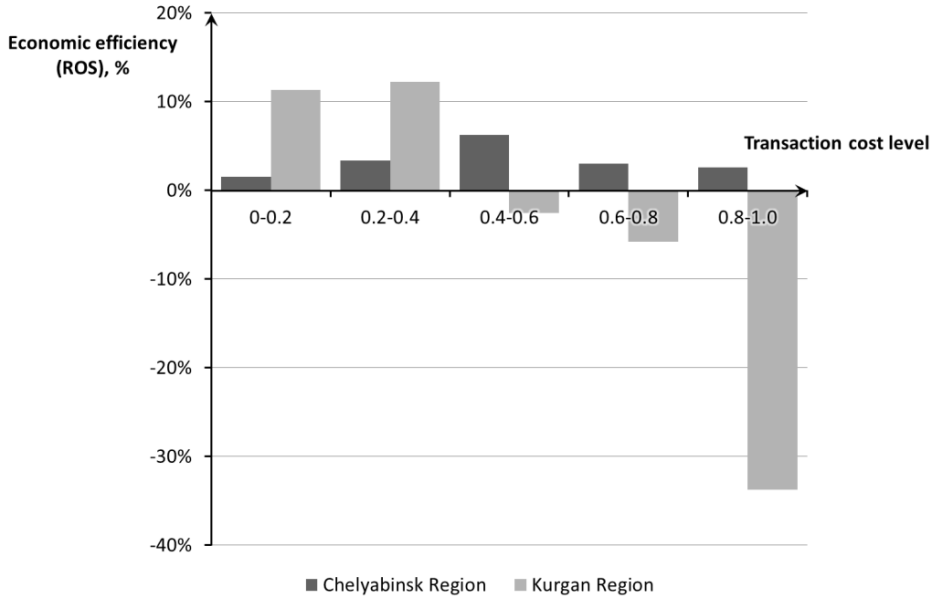


Fig. 6. Analytical grouping of the economic efficiency of the operating activities of the companies in the wholesale sector according to their transaction cost level (Chelyabinsk Region and Kurgan Region).

In the Kurgan Region, the wholesale enterprises (54 companies) had an insignificantly positive value of operating efficiency (about 3%), and only a few companies (less than 7 of 54) showed an economic efficiency level exceeding 10%.

4. Conclusion

Coming back to the issue related to the effect of institutional factors on the success of small and medium sized businesses, we should mention that the industries selected for this analysis cannot be characterized with high efficiency in general. One exception to this rule is the transport and communications sector in the Kurgan region, which is one of the most successful sectors according to the average economic efficiency level. 2 of the 30 selected companies here had a negative efficiency while 19 of the 30 companies showed efficiency levels exceeding 10%. Without a doubt, those are quite high values for small and medium sized businesses.

Lower figures were observed in the rest of the sectors under study. In the construction industry, agriculture and metallurgical production, about 30% of the companies were unprofitable in 2013, with the majority of the companies of those industries showing an economic efficiency of 3% to 5%. The figures observed in the wholesale sector are a bit better; there are no more than 15% of unprofitable companies there, but the number of the companies showing the economic efficiency of over 10% is only about 11%, which is not very big.

We have also found certain regional differences in this study. There are two sectors, construction and wholesale, which are represented to a sufficient degree by small and medium sized enterprises in both regions. The economic efficiency analysis performed in those industries has shown that the percentage of unprofitable companies is higher

in the Kurgan Region than in the Chelyabinsk Region. At the same time, the percentage of companies with an economic efficiency exceeding 10% is higher in Kurgan Region. The small and medium sized enterprises of the Chelyabinsk Region were generally more successful (i.e. profitable) according to the results shown in 2013.

The analysis that we have made in relation to the effect produced by institutional factors on the business success allows us to come to a series of conclusions.

First, there is a nonlinear interrelation between transaction costs and the economic efficiency of an enterprise. The institutional factors (the transaction cost value) produce a significant effect on the level of the economic efficiency for small and medium sized enterprises. The industries with high levels of transaction costs (metallurgical production, agriculture, wholesale) show a very low or negative average economic efficiency of operating activities. In the transport and communications sector, where the transaction cost level is almost two times lower, the economic efficiency values are the highest; up to 20% on average.

Second, the growth of the transaction costs is accompanied by an increasing value of the business success of an enterprise up to a certain point; after that level has been reached, the economic efficiency starts to go down and, as a rule, reaches the minimal value at the highest level of transaction costs. This tendency was observed in each of the seven sectors under study.

Third, we managed to determine the threshold (that is, the critical transaction cost level) beyond which companies become less profitable. In 5 out of the 7 sectors under study, the critical transaction cost level appeared to lie in the 0.4 to 0.6 interval, right in the middle of the sequence. This fact proves the rule highlighted above: increasing the transaction costs up to values which are higher than average for the industry causes the economic efficiency of a company to decrease. Such companies can be characterized as enterprises with an irrational structure of costs and/or assets.

This means that we can assume that every industry has its maximum permissible transaction cost level. The companies which, based on their experience or intuition, remain within that limit can increase their profit and become successful. Those which are unable to reduce their costs for whatever reason run the risk of being unprofitable.

The conclusions made in the course of this study prove the high significance of the factors of the institutional environment with regard to the values of success for small and medium sized enterprises. It requires some special attention from governmental authorities in their activities aimed at improving the institutional environment. Besides, one should not underestimate the role of the entrepreneurs themselves in this respect. The success of a particular business depends no less on the entrepreneur's decisions regarding the volume and structure of the costs, often non-production ones, than on the measures taken within policies of governmental control.

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