

Employment in Small Business Sector and its Impact on Quality of Life in Russian Regions

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Abstract—Employment in small business sector is an essential factor in improving quality of life (QOL) for a region. Successful small businesses require human, financial, technological investments and result in improved QOL. “Small business and entrepreneurship is now commonly seen as the primary engine of economic development [1]. Small business creates new workplaces, reduce unemployment payments and reduce crime in regions [2]. An aging population paired with depopulation result in increased cost of benefits like pension payments which adversely impact the Russian national budget. Stimulation of secondary employment (employment for retired) in small business sector can result in improved QOL for the elderly. Problems of unemployment can be solved mostly through small business development [3]. The objective of this research is to evaluate a relationship between employment in small business sector and QOL in 78 Russian regions. The regression model was used for an empirical analysis. The results show that there is an effect of employment in small business sector on QOL at a reasonable level. The findings and analysis revealed that employment in small business sector has a positive effect on QOL in all Russian regions analyzed.

Keywords—Employment, Small business, Quality of life, Regions, Russia.

I. INTRODUCTION

Improved Quality of life (QOL) is one of the main outcomes of past development of science, industries, safety, human capacity of regions and social - economic conditions. Many authors outlined the importance of small business sector and QOL [4, 5, 6, 7, 8, 9]. Therefore, improvement of QOL for the population is a main indicator of effective state governance. The level of QOL in Russia significantly lags behind other developed countries and ranked as 55th place out of 187 in the world, measured by an index of human development and welfare [10]. The characteristics of welfare in Russia and developed countries in 2012 are presented in Table One.

An assumption made is the Russian government should provide a worthy standard of living to the citizens. The parameters of living reached by other developed countries should become a priority for Russian government [11]. One of the methods to reach this goal is to stimulate the development of small business and entrepreneurship in Russia. According to Abramova [2] small business helps to create new workplaces, reduces unemployment payments and reduces crime in regions. Evalenko M. [12] argues that the level of employment in small business sector doesn't have a significant impact on QOL since its indicators are comparable to the general level of unemployment in the country. Our goal is to determine the degree of relationship between employment in small business sector and QOL, measured by a ratio of income per capita to living minimum in Russia. After combining several of the smaller original 83 regions established in 2008 we considered the above factors in 78 adjusted Russian regions and in Moscow and Saint - Petersburg from official database of Federal State Statistics Index of human development.

Service of the Russian Federation [13]. Primary areas considered were programs of social and economic development of regions of the Ministry of Economic Development [14] for period from 2008 to 2012.

TABLE 1. INDEX OF HUMAN DEVELOPMENT

Characteristic	Russia	Countries with very high human development (Rank from 1 to 47)	Countries with high human development (Rank from 48 to 94)	Countries of Europe and Central Asia
Human Development Index (HDI), 2012	0.788	0.905	0.758	0.771
Life expectancy at birth, 2012	69.1	80.1	73.4	71.5
Mean years of schooling, 2012	11.7	11.5	8.8	10.4
Expected years of schooling, 2012	14.3	16.3	13.9	13.7
Gross national income (GNI) per capita, 2012	14,461	33,391	11,501	12,243

II. REVIEW OF SME PARAMETERS IN THE RUSSIAN FEDERATION

To begin we considered the criteria of small and medium enterprises (SME), including micro enterprises, and the level of SME development in Russia. The comparative analysis of small business criteria for Russia and European Union are given in Table Two [15, 16]. For comparability the analysis of maximum annual turnover is given in Euro. The turnover criteria is reconsidered every five years in Russia. The conversions rate of 48.76 rubles to 1 Euro is valid as of May 9th, 2014.

Looking at the table above, the first two criteria (maximum number of employees and maximum annual turnover) are comparable for Russia and the European Union (EU). Criteria values in the EU are almost twice as much as those of Russia. Other criteria differ so much that they are incomparable. The criteria for maximum annual total balance sheet (assets) is not defined yet by Russian government, although Russian legislation established the additional criteria for the maximum percentage of contributed capital by Russian government, foreign entities, religious and charitable entities, and for non-small business entities, which should not exceed 25%. According to National Institute system research of problems in entrepreneurship [17], the number of SME in 2012 increased by 3% compared to previous year. The average number of employees in SME grew by 8.7%, and the share of employment in SME out of total employment increased by 13.6% in Russia. The biggest increase falls in Ural and Central Federal districts. Decrease in SME employment is noted in the Far East Federal district. The turnover of SME increased by 22% in 2012, and according to the European commission, the revenue of the Russian SME surpasses turnover of Estonia by 40 times. This is two times higher than in Poland, and equals the revenues of SME of the Netherlands, but three times smaller compared to Germany and Great Britain.

TABLE 2. COMPARATIVE ANALYSIS OF SMALL BUSINESS CRITERIA FOR RUSSIA AND EUROPEAN UNION

	Maximum number of employees			Maximum annual turnover, mln Euros		
	Micro	Small	Medium	Micro	Small	Medium
Russia	15	100	250	1,23	8,20	20,51
EU	9	49	250	2	10	50

TABLE 2. COMPARATIVE ANALYSIS OF SMALL BUSINESS CRITERIA FOR RUSSIA AND EUROPEAN UNION (CONT.)

Maximum annual balance sheet, mln Euros			Maximum share in Contributed capital of RF government, foreign entities, and non-small business entities		
Micro	Small	Medium	Micro	Small	Medium
n/a	n/a	n/a	25%	25%	25%
2	5	43	n/a	n/a	n/a

In Fig. 1 below you see the structure of SME by types of industries. The most common type of business in Russia falls in the retail sector, which is explained by tax privileges and technological simplicity.

According to Rosstat [13], there are several interesting facts about Russian SME criteria. About one hundred SMEs had the number of employees (up to 800 people), which is way higher than established criteria of 250. The maximum threshold of turnover for micro enterprises exceeded the criteria, and was 500b rubles in 2012 (or 10.25 Euros after a conversion), and by number of employees such enterprises actually satisfy the medium size criteria. About 86% of SME are micro enterprises with number of employees up to 15 people, but they provide about third of total employment in SME and nearly a half of all revenue. All these facts lead to an expectation that existing criteria of SME are going to be changed soon in the Russian Federation. Overall, the data in 2012 reveals an increasing trend of all factors in small business sector of Russian economy, and importance of small business in total economy of Russia.

III.EMPLOYMENT IN SMALL BUSINESS SECTOR AND QOL MEASURES

According to *International Labor Organization* [18]: "... Almost 202 million people were unemployed in 2013 around the world, an increase of almost 5 million compared with the year before. This reflects the fact that employment is not expanding fast to keep up with the growing labour force". Solving this problem is possible through stimulation of employment among official unemployed by Labor Exchanges. Practice of increase of employment rate through creation of conditions for development of small business is widely used in many countries. One reason for this successful practice is the low hiring cost in small business sector compare to those hired in large corporations. Economists estimate that the cost of creation of one workplace in small business sector is 40 to 45 times lower than those in large business, and an employment in SME in 4-5 years will lead to increase of work places by 26,000 [19].

Many experts [20] note that in thirty years each employed adult will support one retired in Russia. An aging population pared with depopulation result in increased cost of benefits like pension payments which adversely impact the Russian national budget.

Population aging in developed countries is a subject of debate and discussion among researchers and international organizations [21, 33]. Research forecasts that if the current tendency of life expectancy increases and the relative health of population decreases, than the expected growth of the public expenditures on medical care will increase in range from 0.7% to 7.4% gross domestic product.

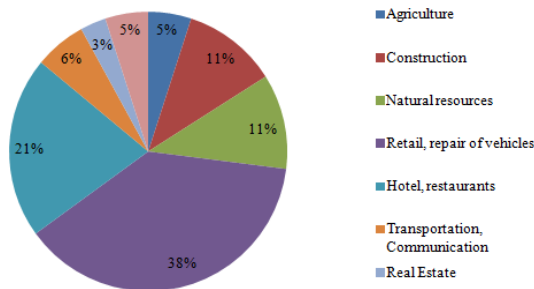


Figure 1. Structure of SME by type of industries

A population is considered old [22] if a share of 65years old and older is more than 7%. According to Vovchenko A., a deputy of a minister of labor in Russia, the share of 65 and older population is almost 13% in 2013 up from 10.2% in 1991 [23], which implies that Russian population is old.

According to UN projections [22] in the middle of 21st century life expectancy for both male and female in world will increase by 7.18 years (up to 75.9 years in 2045 – 2050 years); in Russia the life expectancy will increase only by 5.36 years (up to 72.43 years in 2045-2050 years). Also, the age of retirement in Russia (55 for female and 60 for male) is younger compared to USA (66 for both female and male) and Europe (range from 60-65 for female and 62-65 for male) [24] which leads to higher portion of retired population in Russia compare to these other developed regions.

According to International Investment Project [17] in 2003 a replacement coefficient in Russia (portion of pension compensation compared to last working salary) was 0.30, i.e. retired person has three times worse life compared to preretirement period. In comparison, the minimal replacement coefficient should be .40, while a respectable level of living for retired should be approximately .60 - .70 of their preretirement QOL. Also, the source shows that in 2007 the average Russian pension payment per capita was almost equal to the living minimum¹ (a portion of average pension payment per capita to living minimum was 1.07) which implies only minimum satisfaction with QOL. There is an increasing trend in this ratio: it gradually increased from 1.29 in 2010 to 1.49 in 2013 [13, 25].

Based on worldwide experience Rube [3] notes that a problem of unemployment can be solved mostly through small business development because potential employees are attracted into small business sector by lack of long term contracts, individual labor load and flexible working schedule. This is why a stimulation of secondary employment (employment for retired) in small business sector will cause improvement in their QOL.

Many researchers [26] measured QOL by different dimensions: economic, health, social, technological, work, institutional, and ecological. Based on above analyses we decided to use economic and social dimensions, and measure QOL by a ratio of income per capita to living minimum on a regional level.

Therefore our goal is to research the relationship between employment in small business sector and QOL measured by a ratio of income per capita to living minimum on a regional level.

The hypothesis is based on a concept that the higher an employment rate in small business the higher QOL in a region. Therefore, the tested hypothesis is:

H1: There is a positive relationship between employment in small sector and QOL.

IV. FRAMEWORK AND METHODOLOGY

The research comprises data of 78 adjusted regions of the Russian Federation, and Moscow and Saint - Petersburg for period 2008 to 2012. The research of small business sector and its impact on QOL in Russian regions include the time log because of its impact on human and financial investments (positive or negative) which take place only over a period of time. Official statistical data was posted with one year intervals so one-year intervals were used for the research time log in this study.

¹ The average living minimum in Russia is 6,354 rubles (conversions rate of 30.00 rubles to the U.S. dollar as of December 31, 2013). Pension Fund of the Russian Federation http://www.pfrf.ru/socdoplata_doprojmin/27026.html

The starting point of 2008 was selected based on the fact that the criteria of small business enterprises were changed in that year and this start point enabled consistent comparison data samples.

Regression analysis was used to find a relationship between two variables: a ratio of income per capita to living minimum and an employment in small business sector. The model formula (equation 1) shown below was employed:

$$Y = B_0 + B_1EMPL + e_i \quad (1)$$

where: Y - is a ratio of income per capita to living minimum (QOL); B_0 - is an intercept; B_1 - is the slop/regression weight or the coefficient of the function, which represent a relationship between dependent and independent variables; $EMPL$ - a level of employment in small business sector; e_i - is an error of prediction

A linear relationship was anticipated and is the reason for selecting the regression model along with descriptive research design and bivariate correlation.

V. RESULT

The histogram and normality plot with test were used to evaluate normality and linearity. Histogram displayed moderate, positively skewed distribution. The Normal Q-Q plot supports these findings and exhibited normal distribution, in which plots fall close to the straight line [27]. The trend is linear and as such a linear regression can be used for further analysis.

The first step used to analyze the data was descriptive statistics performed with the SPSS program. The results are shown in Table Three.

TABLE 3. DESCRIPTIVE STATISTICS

	Mean	Std. deviation
EMPL	142.17	196.80
QOL	163.60	63.34

The average value of an employment (EMPL) had a mean of 142.17 and standard deviation of 196.80 while QOL had a mean of 163.60 with a standard deviation of 63.34. There is a high variability in both EMPL and QOL among the Russian regions during the period 2008 to 2012 as shown by their standard deviation values.

The analysis of a matrix of correlation (see table Four) shows that there is a strong positive correlation between QOL of the population and an employment in small business sector, which means the higher employment in small business sector, the higher a ratios of income per capita to living minimum (0.593).

TABLE 4. PEARSON CORRELATION

	EMPL	QOL
EMPL	1	
QOL	0.593	1

The second step was a regression analysis which includes three major parts of the output: model summary, ANOVA and coefficient table (tables 5, 6, and 7 respectively). The *model summary* displays several correlation indices: correlation R, square correlation, and adjusted square correlation.

TABLE 5. MODEL SUMMARY

R	R ²	Adj.R ²	Std. Error of the Estimate	Change Statistics				
				R ² Change	F Change	df1	df2	Sig. F Change
.595 ^a	.354	0.352	51.013	0.354	173.37	1	317	.000

a.Predictors: (Constant), EMPL

b.Dependent variable: QOL

For the Pearson r , R^2 (coefficient of determination) is the proportion of variability in QOL that could be accountant for by a level of

employment in small business sector. Analysis of the table Five shows that the coefficient of determination R^2 equal 0.354, which means that EMPL explain 35.4% of QOL for Russian regions leaving 64.6% unexplained. The P-value of 0.00 (less than 0.05) implied that the model of EMPL is significant at the 5% level of significance, $R^2 = 0.354$, $R^2_{adj} = 0.352$, and $F(1, 317) = 173.378$, $p < 0.001$.

The ANOVA (Table Six) represents F-test, which determines whether the relationship between dependent and independent variables is large enough to be meaningful [27] and linear. The analysis of results shows that the model has statistically significant calculated F value, which is significantly more than critical (3.84) for a P-value of 0.00 with 317 degrees of freedom, which implies that relationship between independent and dependent variables is large enough to be meaningful.

TABLE 6. ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	451,199.24	1	451,199.24	173.378	.000 ^b
Residual	824,961.62	317	2,602.40		
Total	1,276,160.86	318			

a.Dependent variable:QOL

b.Predictors: (Constant), EMPL

Based on the statistical importance a linear regression model explains a relationship between QOL measured by a ratio of income per capita to living minimum and share of employment in small business sector for 78 Russian regions, Moscow and Saint-Petersburg for a period 2008 to 2012. In model estimation the least square solution concept [28] was used which provided the constant, *regression coefficient (B)*, and *beta coefficients (β)*. A summary of regression model is presented in Table Seven.

TABLE 7. COEFFICIENTS^a OF REGRESSION EQUATION

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	136.393	3.525		38.689	.000
EMPL	0.191	.015	.595	13.167	.000

a.Dependent variable: QOL

The following simple linear regression equation (2) is generated using the B weight: $Y = 136.39 + 0.191X$ (2)

Regression result indicates an overall model of a variable, share of employment in small business sector that moderately significant. For the association between EMPL and QOL the following indices were used: constant = 136.39 (shows that at zero value of EMPL in Russian regions, QOL takes the value 136.39), $X = + 0.191$, shows that one unit change in EMPL results in 0.19 units increase in QOL. The result indicates that there is an effect of an employment in small sector on QOL with 35.4% possibility of EMPL in predicting the variance QOL. Therefore, the strategy of employment in small business sector defines QOL level to an important extent for Russian regions.

VI.DISCUSSION AND CONCLUSIONS

Practical worth of the research is that the result can be used for government strategy of regional development. The result confirmed the proposed hypothesis that there is a positive relationship between employment in small business sector and QOL measured by a ratio of income per capita to living minimum. That implies that the higher an employment rate in small business the higher QOL in a region. Therefore rational governance of employment in small business sector improves the QOL.

As was stated earlier, a practice of increasing employment through a creation of conditions for development of small business is widely used in many countries. Russia should be an integral part of the best practices of small business development. Recently, the Russian government introduced several

types of privileges for creating SME. All unemployed in Russia may receive federal help of 60 000 rubles for small business opening plus the same amount for every employee. Additional programs exist in almost every region. For example in Moscow 300 000 rubles are given for new business opening if one is graduating from army, a single parent or disabled. All unemployed may receive 25,000 rubles for business registration (the conversions rate of 34.74 rubles to 1 US dollar is valid as of May 15th, 2014.). A person must be officially unemployed and tender a business plan which should (advisable) indicate the intent to create a new work place [29].

Second in importance to a regional strategy is a stimulation of secondary employment (employment of retired) in SME. Employment in small business sector of some portion of retired population will increase QOL and reduce total pension payments. Recently the Russian government planned to increase the retired age for females to 60 (currently 55) and to 65 for males (currently 60), in order to solve the deficit in Pension Fund problem which is about 1 trillion rubles [30].

The model can be used for federal programs of small business development. EMPL as independent variable was linearly related to QOL (dependent variable), thus simple linear regression can be used to forecast QOL, measured as a ration of the income per capita to living minimum. The minimal ratio of the income per capita to living minimum for respectable level of QOL in Russian regions should be 3:1 [31]. Even though an average ration of the income per capita to living minimum in Russia is 3.5:1 [32], these ratios are below minimal (3:1) in 52% Russian regions. According to our calculation, the higher average is due to higher ratios in Moscow and Saint-Petersburg.

The constructed model reveals the influence of small business on QOL in Russian regions. The model defines strengths between factors, which helps to form an optimal strategy of social and economic development of Russia through potential of small business. Overall, the data in 2012 shows increasing trends of economic and social factors and the importance of small business for the total economy of Russia.

The constructed model allows revealing the all-Russian tendency of influence of small business on QOL of the population, to define nature and strengths between factors, which helps to form an optimal strategy of social and economic development of Russia through potential of small business. Overall, the data in 2012 shows positive dynamic in small business in all factors, and importance of small business in total economy of Russia.

The findings are in congruence with other studies, which proves the positive relationship between employment in SME and QOL in Russia. Research discussed in this article is the first part of an ongoing project. Further research will include other independent variables (i.e., number of small business enterprises, share of revenue in small business sector, investments in capital assets in small business sector, tax inflows from small business sector, and state contracts in small business sector) so as to strengthen the value of R^2 , using multiple regression analysis. Also, a cluster analysis may be performed to analyze the result by regions.

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