

IMPACT OF SMALL AND MEDIUM-SIZED ENTREPRENEURSHIP ON EMPLOYMENT IN KAZAKHSTAN

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ABSTRACT

Nowadays, small and medium-sized entrepreneurship (SME) play a key role in the development of the national economy of Kazakhstan. In 2019, there were over 1.2 million small and medium-sized enterprises in Kazakhstan. The majority of SME are active in distributive trades and real estate, renting & business activity, followed by construction, manufacturing, and transport & communication. The SME have many contributions to make labor-intensive and more often self-proprietary, comparatively improved levels of efficiency and better income distribution, has a potent socio-economic imperative for the country, and disseminates broadly the benefits of economic growth. However, there is a debate that either SME can solve the problem of unemployment and in particular, so far there is little information available on the impact of entrepreneurship on employment in Kazakhstan. The objective of this manuscript is to fill this information gap by investigating the entrepreneurship impact on employment by applying regression analysis. A model of regression analysis was considered most appropriate for the data analysis of the study used. The use of regression analysis results from the fact that it will enable the study to test the influence of independent variables on the dependent variable and to ascertain the rate of change in the dependent variable as determined by an increase or decrease in the independent variables. The results of the regression analysis revealed that there is a positive relationship between SME and unemployment reduction. This manuscript may be beneficial for practitioners and academicians. Examining the entrepreneurship impact on employment tends to raise or provide some useful insights into some theoretical issues on one hand. On the other hand, it raises some practical implications for policy makers in the government.

Keywords: Entrepreneurship, Employment, Regression Analysis, Kazakhstan.

INTRODUCTION

Nowadays, it becomes obvious that the development of a competitive socially oriented market economy is impossible without building a flexible labor market. The analysis of the impact of entrepreneurship on the development of the labor market and employment is becoming especially relevant, which formulate a set of effective measures aimed at increasing employment and developing the economy as a whole (Davis et al., 1996; Foelster, 2000; Carree et al., 2002; Acs & Armington, 2004; Oosterbeek et al., 2010; Darvish, 2011; Doran et al., 2016). Quantitative and qualitative indicators reflecting the state of the labor market are simultaneously indicators of the effectiveness of using the investment, organizational and financial potentials of the labor market, as well as the national economy as a whole (Baumol, 1993; Rocha, 2004; Mueller, 2007; Cumming et al., 2014; Al-Haddad, et al., 2019). They characterize the state and

direction of development of an entrepreneurial society, whose participants, along with the functions of producing goods and services, combining factors of production, stimulating aggregate demand and introducing the achievements of scientific and technological progress, perform a social function consisting in creating jobs, which determines the quality and the standard of living of the population, the state of human capital (Lepoutre & Haener, 2006; Taiwo et al., 2012; Memili et al., 2015; Maksimov et al., 2017). This, in turn, is an objective prerequisite for the formation and implementation of labor potential, the rate and type of economic growth depend on the volume and quality (Audretsch & Thurik, 2001). Entrepreneurial structures on the labor market and employment is determined by many factors, among which are: the type of economic activity performed, the legal form, the level of concentration and centralization of production, etc. (Vijayakumar, 2013; Oyedijo, 2012; Malesios et al., 2018). In this regard, it seems necessary to identify business entities in as independent participants in the labor market, which will determine the characteristics of labor resources, changing under the influence of entrepreneurial activity. Interest in such a study is growing due to the deterioration of the macroeconomic situation in the context of aggravating geopolitical risks, which inevitably affects the state of the labor potential of the national economy as a whole and of individual territorial entities (Stokes, 2000; Audretsch & Keilbach, 2008; Lonial & Carter, 2015).

Historically, entrepreneurship has not played an important role in Kazakhstan due to specific resource-based economy. Resource sector in particular energy is by far the most important for Kazakhstan's economy. It accounts for one quarter of its total GDP and just under one third of its total industrial production, and contributes about half the income to the annual budget (Karatayev & Hall, 2020). Energy exports, which account for 60% of total national exports, have been the crucial factor that explains the impressive annual rise of 7-10% of Kazakhstan's GDP for the years 2001–2007 (Karatayev et al., 2016). To reduce reliance on resource export, government aims to develop sustainable knowledge-based economy (Karatayev & Hall, 2017) with dynamic activities in SMEs (Abdymanapov et al., 2016). Nowadays, SME play a key role in the development of the national economy. The effective development of entrepreneurial activity depends on the influence of external and internal environment. An analysis of external (international, political, economic, legal, environmental, technological, social, market) and internal (consumers, suppliers, competitors) factors is necessary for the development and implementation of a balanced state regulatory policy, which should meet the interests of small and medium-sized enterprises and promote growth degrees of economic freedom of business (Singh et al., 2012; Kurmanov et al., 2016). According to the National Statistics Agency in 2019, 1.2 million small and medium-sized enterprises were registered in Kazakhstan (NSA, 2019). Small and medium-sized enterprises employ 21% of the total number of people active in the economy and account for about 24% of the total turnover of products and services produced by enterprises in the country (Saparaliyev et al., 2019). Of these, 57.6% of small and medium-sized enterprises are individual entrepreneurs, 28.1% are joint entities, 22.4% of them are microenterprises, 8.6% are small enterprises and 0.9% are medium-sized enterprises (Saiymova et al., 2018a). The main activities of small and medium enterprises are trade (more than 36.7%) and the provision of services (28.6%). In addition, in Kazakhstan, there is a high level of employment and low unemployment. The employment rate is 75.1% and the overall unemployment rate is 8.5% (Saiymova et al., 2018b). In this regard, there is growing interest in modeling the entrepreneurship impact on employment.

METHODOLOGY

Regression analysis, as a combination of mathematical methods for detecting the correlation between random variables or attributes, allows a comparison of a number of indicators in the field of employment through SME and further develop a model of the measured data and study their properties (Menard, 2000; Peng et al., 2002; Tonidandel & LeBreton, 2011). Data sets for regression analysis obtained from National Statistic Agency for 2011-2019 period (NSA, 2020). This Agency is national provider of credible, relevant, accurate, and timely statistics that are essential for policy makers, individuals, households, businesses, academic institutions, and other organizations to make informed decisions. The data on socioeconomic and entrepreneurial trends in Kazakhstan is publically available on <https://stat.gov.kz/>.

The indicator “The rate of growth of employment” was selected as the resulting indicator. The dynamics of the growth rate of employees in SME for the period 2011-2019 has a general growth trend (Table 1). In many respects, the positive dynamics of this indicator is due to the development of the financial and credit support system for SME and the solution of the problem of access to financial resources and the active participation of local financial institutions in lending to SME.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	103.3	100.7	100.8	95.1	102.1	100.8	102.6	101.4	104.3

The following indicators were selected as factors influencing the rate of growth of employment:

- X₁ - the number of small and medium-sized entrepreneurship;
- X₂ - the number of economically active population;
- X₃ - the number of employees;
- X₄ - the number of working citizens with higher education;
- X₅ - the number of unemployed;
- X₆ - the average monthly wage of the population;
- X₇ - real disposable income of the population;
- X₈ - inflation rate.

The first factors selected for the development of the economic and mathematical model is the dynamics of the growth rate of the number of SME for the period 2011-2019 (Table 2). This indicator is a kind of barometer of the economy, as a result, has very unstable dynamics: during periods of economic growth-the number of SME increases, during moments of economic recession quantitative growth of SME does not occur.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	108.9	113.9	109.8	111.4	105.6	97.5	98.0	103.0	108.9

Analyzing the following indicator “*The growth rate of the economically active population*” (shows in Table 3), we note that the largest increase in the economically active population in Kazakhstan was recorded in 2012.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	101.8	102.6	99.3	97.6	99.6	99.7	99.8	99.9	99.4

As the next factor selected for the correlation and regression analysis, the indicator “*The growth rate of the number of employees*” was selected (Shows in Table 4). The minimum value is noted in 2014-95.7%, after which the general trend of employment of the population until the end of the period becomes positive.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	103.0	102.7	99.3	95.7	100.0	100.5	101.5	100.2	102.4

In direct proportion to the economic situation are not only indicators of changes in employment and unemployment, but also the quality of the workforce, determined by the level of education. Therefore, the next factor was selected “*The growth rate of the number of working citizens with higher education*” (Shows in Table 5). Higher education is very important in the current economic environment, as it enables potential employees to choose from a wider range of vacancies, while people with secondary, specialized secondary or vocational education are very limited in their choice in employment. The important issue remains the quality of education, the level of training of specialists. The overall dynamics of this indicator is negative, which negatively affects the activities of enterprises.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	113.7	101.9	101.5	107.5	98.3	97.2	100.7	94.9	96.2

The next indicator selected is “*The growth rate of the number of unemployed*” (Shows in Table 6). The minimum value noted in 2017 is 67.8%. The maximum growth rate of the number of unemployed in the study period was recorded in 2014, and then it amounted to 142.6%.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	80.3	100.3	100.5	142.6	94.1	87.5	67.8	92.8	68.4

The next factor for the development of the model was selected the factor “*The growth rate of the average monthly wage of the population*” (Shows in Table 7). The average monthly wage affects the level of employment, not only as a motivating indicator, but also as an argument for the development of entrepreneurship in certain industries. The dynamics of this indicator does not have a pronounced growth or decline trend. For the growth rates of the average monthly wage during the study period, transitions are observed: the maximum value was noted in 2012- the growth rate was 124%, and the minimum - in 2014, when the growth rate was 101%.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	123.8	124.0	123.1	101.6	110.5	112.9	111.8	112.9	108.0

Another indicator for conducting a multivariate analysis was selected “*The growth rate of real disposable income of population*” (Shows in Table 8). In contrast to the average monthly wage, the trends in the growth rates of real disposable income of citizens have a general tendency to decrease. The maximum value was recorded in 2012, when the growth rate of the indicator was 113%. The minimum value was noted in 2014 - the growth rate of the indicator was 99.2%. The influence of real disposable income of citizens on the level of employment in SME is determined by means of additional income, part-time employment, and other equally important criteria.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	111.2	113.3	110.6	99.2	103.9	106.0	106.3	106.1	105.8

The last factor of the economic-mathematical model was chosen as “*The growth rate of inflation*” (Shows in Table 9). Analyzing the data in the table, we can conclude that in crisis periods (2013 and 2019), the maximum value of this indicator is noted -11.9 and 11.8%, respectively. The growth rate of inflation reflects the growth rate of prices and affects the state of the economy of economic entities, the level of development of the regions and the country as a whole. The increase in inflation negatively affects the financial and economic situation of SME; as a result, the unstable situation entails a decrease in the level of employment in this sector of the economy.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Indicator growth rate	8.7	6.0	11.9	12.7	8.1	7.8	5.7	5.6	11.8

To conduct a correlation regression analysis, it is necessary to form a summary table of indicators that affect the dynamics of the number of employees in SME (shows in Table 10). Table 10 serves as input to the development of a pair correlation matrix.

Indicator	2011	2012	2013	2014	2015	2016	2017	2018	2019
Y	103.3	100.7	100.8	95.1	102.1	100.8	102.6	101.4	104.3
X ₁	171.0	108.9	113.9	109.8	111.4	105.6	97.5	98.0	103.0
X ₂	101.8	102.6	99.3	97.6	99.6	99.7	99.8	99.9	99.4
X ₃	103.0	102.7	99.3	95.7	100.0	100.5	101.5	100.2	102.4
X ₄	113.7	101.9	101.5	107.5	98.3	97.2	100.7	94.9	96.2
X ₅	80.3	100.3	100.5	142.6	94.1	87.5	67.8	92.8	68.4
X ₆	123.8	124.0	123.1	101.6	110.5	112.9	111.8	112.9	108.0
X ₇	111.2	113.3	110.6	99.2	103.9	106.0	106.3	106.1	105.8
X ₈	8.7	6.0	11.9	12.7	8.1	7.8	5.7	5.6	11.8

RESULTS

Using a correlation regression analysis, we obtain a matrix of pair correlation coefficients (Shows in Table 11). Factors such as: X_3 - number of employees; X_6 - the average monthly wage of the population; X_7 - real disposable income of the population; X_8 - the inflation rate does not satisfy the conditions of the study, therefore it is discarded. An analysis of the matrix of pair correlation coefficients showed the presence of a relationship of factors and the resulting indicator, thereby determining the influence of the criteria on the change in the number of employees in SME.

The second step in building a model is conducting a regression analysis. Regression is necessary to analyze the effect of factors X on the resulting indicator Y by deriving some functional dependence, called the regression equation or correlation regression model (Shows in Table 12). As a result of the regression analysis, the value of the "R-squared" indicator, which is the coefficient of determination, amounted to 0.957275. The coefficient of determination, the factors included in the model, more than 70% determine the impact on the change in the number of employees in SME. As a result of the regression, the coefficients necessary for compiling the regression equation were also obtained (Shows in Tables 13 & 14).

Table 11
A MATRIX OF PAIR CORRELATION COEFFICIENTS

	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈
Y	1								
X ₁	0.85	1							
X ₂	0.88	1.00	1						
X ₃	0.68	0.86	0.86	1					
X ₄	0.89	0.99	0.99	0.86	1				
X ₅	0.87	0.99	0.99	0.82	1.00	1			
X ₆	0.85	0.95	0.94	0.70	0.96	0.98	1		
X ₇	0.82	0.99	0.98	0.85	0.99	0.99	0.96	1	
X ₈	0.87	0.94	0.94	0.69	0.96	0.98	1.00	0.96	1

Table 12
THE INDICATORS REMAINING AFTER THE CORRELATION ANALYSIS

Y	X ₁	X ₂	X ₄	X ₅
103.3	171	101.8	113.7	80.3
100.7	108.9	102.6	101.9	100.3
100.8	113.9	99.3	101.5	100.5
95.1	109.8	97.6	107.5	142.6
102.1	111.4	99.6	98.3	94.1
100.8	105.6	99.7	97.2	87.5
102.6	97.5	99.8	100.7	67.8
101.4	98	99.9	94.9	92.8
104.3	103	99.4	96.2	68.4

Multiple R	0.978404
R- squared	0.957275
Normalized R- squared	0.91455
Standard Error	0.763673
Observation	9

Y	110.5337
X ₁	0.053807
X ₂	0.114424
X ₄	-0.18223
X ₅	-0.09027

Based on the results obtained, the regression equation takes the form: $Y=110.5337+0.053807X_1 + 0.114424X_2 - 0.18223 X_4 -0.09027 X_5$. The obtained equation meets the goal of correlation and regression analysis and is a linear multivariate model of the dependence of the number of people employed in SME on four main factors, each of which affects the change in the number of employed people in the SME (Shows in Table 15).

The economic sense of developing a correlation and regression model is as follows: an increase in the number of SME by 1% will contribute to an increase in the number of employees in SME by 0.05%; a 1% reduction in the number of working citizens with higher education will contribute to an increase in the number of people employed in SME by 0.18%; a decrease in the number of unemployed by 1% will contribute to an increase in the number of people employed in SME by 0.09%. As a result of calculations and economic analysis, it was found that the greatest impact on the change in the number of people employed in SME is exerted by the number of SME, the number of economically active population, the number of working citizens with higher education and the number of unemployed.

The resulting model can be used to predict changes in the average number of employees at certain factor values. The values of such indicators as the number of SME, the number of economically active population, the number of working citizens with higher education, the number of unemployed for the period 2011-2019 were used as initial data for the development of forecast values for 2020-2022. Thus, in the process of developing forecasted indicator values, all factors have a positive dynamics, with the exception of the growth rate of the economically active population.

Indicators	Forecast	
	2020	2022
Y	102.5	104.2
X ₁	89.2	89.8
X ₂	98.8	98.6
X ₄	93.1	91.8
X ₅	75.6	63.6

CONCLUSION

Small and medium-sized entrepreneurship provide a relatively higher growth rate of the number of employees. The analysis allows, thus, showing some features of the functioning and development of SME in the modern market system, to identify its role in solving employment problems. It has been established that SME is in demand and successful where the demand for products is often changing in nature or personified. These areas include the service sector (in this area, the total share of employees in SME has traditionally increased), art, craftsmanship, etc. The SME can actively create jobs for socially vulnerable categories of the population, contributes to the development of self-employment. However, one should also point out the ambiguous impact of the development of SME on employment processes, since, on the one hand, SME, expanding, attracts more and more free labor, but at the same time fierce competition both within the SME system and between SME and big business, leading to the ruin of part of small enterprises and the loss of jobs. Hence, there is a need to create such conditions for the functioning of the SME system under which employment growth would be stable.

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