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Implementation of state business support programs: current situation, analysis and proposals

Abstract

Object: To determine the factors affecting the development of medium and small businesses, as well as to investigate the degree of influence of state support on entrepreneurship in the Republic of Kazakhstan.

Methods: The study used statistical methods of analysis, including multiple correlation-regression modeling.

Findings: The authors put forward and tested hypotheses about the presence of a relationship between the dependent variable “Share of SMEs in GDP” and such factors as “The amount of funds for support for SMEs”, “Employed in the SME”, “Number of able-bodied population”, “Index of prices for food products”, “GDP per capita”, “Level of youth unemployment”. To prove or refute these hypotheses, a correlation and regression analysis was carried out. A check of the variable model for multicollinearity has been checked and the determination coefficient is calculated. The value of the r-quadratic determination coefficient for the dependent variable “SME share in GDP” is of high value (0.96), which suggests that the factors included in the model are well described and have a high degree of influence on it. In general, the regression analysis showed that the resulting model is adequate and reliable.

Statistically significant coefficients were determined for the variables “Able-bodied population”, “GDP per capita”, “Youth unemployment rate”, that is, the listed indicators play a significant role in changing the “Share of SMEs in GDP”. At the same time, the factors “Number of working-age population” and “Unemployment rate among youth” have an inverse relationship with the indicator “Share of SMEs in GDP”.

Conclusions: regression analysis showed that in Kazakhstan there are certain problems in the implementation of state policy in relation to the development of entrepreneurship. This fact is confirmed by the results of the study. The main hypothesis about the impact of the “Amount of funds to support SMEs” on the indicator “Share of SMEs in GDP” was not confirmed. The presence of problems in the distribution of state resources requires constructive state measures to solve the existing problems.

Keywords: the development of SMEs, GDP, state support, program effectiveness, regression, correlation, factors, employment of the population, the price index.

Introduction

Entrepreneurship is the engine of economic development of any country and the driving force behind economic progress. Government programs should serve as a tool to enhance and promote entrepreneurship in Kazakhstan.

In turn, the socio-economic component that affects the welfare of the country's population as a whole depends on the effectiveness of the implementation of government measures.

The growth of entrepreneurship gives society positive directions for development. This can manifest itself in providing the population with new jobs and, as a result, income growth, which guarantees an increase in living standards and stability in the future. Healthy competition in the business environment and the development of various industries can ensure economic growth and reduce social tensions (Xu et al., 2021).

To date, a distinctive feature of the developed sphere of small and medium-sized businesses is the presence of its high share in the structure of the country's GDP, which in developed countries is about 50-60%.

Thus, in the UK – 51%, Germany – 53%, Finland – 60%, in the Netherlands – 63% (Mennens et al., 2022). Meanwhile, today the share of SMEs in Kazakhstan's GDP is 35% (BNSASPR, 2022), which indi-

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cates a weak development of this area, despite the allocated support measures.

The problems of inefficiency of state support measures are laid even before it is received by business. Thus, according to the KPMG study on state support, the following conclusions were drawn:

- the lack of a full-fledged state support information portal and the presence of only one operator for a specific state program, most respondents identify as one of the significant operational obstacles to participating in state support projects;
- according to 90% of respondents, it is necessary to expand industry criteria and “reengineer” government programs that stimulate business;
- respondents gave a low rating to the quality of state support for business;
- 34% of enterprises assess the viability and effectiveness of programs as “below average”;
- more than 50% of companies consider the possibility of access to information at the “medium” level (KPMG in Kazakhstan, 2020).

Thus, the effectiveness of supporting small and medium-sized businesses should be assessed as the effectiveness of implementing state support programs and improving people's well-being.

Literature review

The problems of the effectiveness of the implementation of state measures to support entrepreneurship are widely covered both in foreign and domestic scientific literature (Pastran et al., 2021; Patel, Rietveld, 2023).

Balekine E.V. in his writings he proposes to use the following indicators: the number of small enterprises; the number of employees in enterprises; the volume of investments in the fixed capital of enterprises; turnover of enterprises; wage fund at enterprises (Balekine, 2010). The disadvantage of this approach is the lack of freely available data on the turnover and payroll of enterprises in Kazakhstan.

According to Dadashev A.Z., it is recommended to apply the indicators of the growth of the overall profitability ratio, equal to the ratio of the sum of the balance sheet profit (or the volume of goods produced, services rendered) to the total costs with the conditional distribution of the share of support (Dadashev, 2018).

Vasilyeva M.V. in his research, he proposes to include such a factor as “individual characteristics of the enterprise” for evaluating efficiency (Vasilyeva, 2019). The disadvantage of this approach is that this approach is unrealistic to implement in Kazakhstan, where uniform requirements for subjects have been adopted. The only exception is regional programs.

In the works of Kuznetsov Yu.V., Bykova N.V. such indicators are: the number of enterprises that have benefited from support; increase tax revenue through support; budget efficiency; the share of innovative SMEs in the total volume of enterprises that received support (Kuznetsov, Bykova, 2017). This approach deserves attention, since it is proposed to introduce an indicator of “innovation”, which can give impetus to the development of the economy as a whole.

According to the works of Glukhov K.V., Chebashev I.A., Mikhalevsky A.V., the effect of support measures can be assessed by such indicators as changes in the number of SMEs, the number of employees in SMEs, changes in revenue, calculated business activity indices according to the OECD (Glukhov et al., 2021). This method, with the exception of the “change in revenue” indicator, can be taken into account when assessing the effectiveness in Kazakhstan.

A review of domestic literature was also carried out. On the topic of interest to us, the study was conducted by Shaikhutdinova A.K., Selezneva I.V., Abdildina S.S. and others (Shaikhutdinova et al., 2019).

Thus, taking into account all the studies on this topic, it can be noted that the authors highlight the main indicators of the effectiveness of the implementation of state measures to support entrepreneurship, namely: growth in employment; development and growth of business entities; the volume of their products.

Methods

The study used statistical methods of analysis, including multiple correlation-regression modeling.

Results

Correlation – regression analysis.

At the first stage of the study, a selection of factors presumably influencing the development of SMEs was carried out. These are such as:

- Y – the share of SMEs in GDP (%);
- X1 – amount of funds to support SMEs (million tenge);

- X2 – employed in SMEs (persons);
- X3 – the number of able-bodied population (thousand people);
- X4 – food price index (%);
- X5 – GDP per capita (thousand tenge);
- X6 – youth unemployment rate in % (15-28 years).

The dependent variable in this case will be the share of SMEs in GDP – Y, independent variables – X1, X2, X3, X4, X5, X6.

For the study, official statistical data of the Republic of Kazakhstan for the period from 2010 to 2021 were used.

At the second stage of the analysis, the selected factors were checked for multicollinearity. This is done in order to protect oneself from undesirable consequences, such as: too large parameter errors, obtaining incorrect signs and inaccurate estimates of regression coefficients, and others.

In this regard, before building the model, it is necessary to carefully check the factors for multicollinearity and eliminate it. To do this, use the matrix of paired correlation coefficients (Table 1).

Table 1. Correlation matrix

Variables	Y	X1	X2	X3	X4	X5	X6
Y	1						
X1	0,83	1					
X2	0,97	0,65	1				
X3	0,69	0,68	0,67	1			
X4	0,48	0,20	0,47	-0,11	1		
X5	0,90	0,69	0,65	0,69	0,22	1	
X6	-0,87	-0,61	-0,56	-0,72	-0,15	-0,65	1

Note – compiled by the authors based on data obtained using MS Excel

Partial correlation coefficients show the tightness of the relationship between the resulting feature and the input factors. According to the comparative criteria, the expediency of including one or another factor in the model is established. It is also possible to rank indicators using the partial correlation coefficient (Table 2).

Table 2. Ranking factors

Factors	Correlation coefficient value
X2 – Employed in SMEs	0,97
X5 – GDP per capita	0,90
X6 – Youth unemployment rate	-0,87
X1 – Amount of funds to support SMEs	0,83
X3 – The number of able-bodied population	0,69
X4 – Food price index	0,48

Note – compiled by the authors

Further, according to the data obtained in Tables 1 and 2, we will analyze the relationship between the parameter “Share of SMEs in GDP” and the above indicators:

1. The correlation between the variables “Employed in SMEs” and “Share of SMEs in GDP” has the highest value (0.97). Moreover, the factors have a direct positive relationship, that is, the growth of one leads to the growth of another factor (the growth of the employed population leads to an increase in the share of SMEs in GDP), i.e. employment is one of the main indicators of the increase in the “Share of SMEs in GDP”.

2. GDP per capita (0.90) has a positive, rather high correlation with the “Share of SMEs in GDP”.

3. The indicator “Youth unemployment rate” (-0.87) negatively correlates with the “Share of SMEs in GDP”.

4. The indicator “Amount of funds to support SMEs” has a direct positive relationship with the “Share of SMEs in GDP” (0.83), but occupies only 4th position in the rating of factors.

5. The correlation between the “Number of able-bodied population” and “Share of SMEs in GDP” was 0.69.

6. The least influence, among all factors, on the “Share of SMEs in GDP” is the “Food Price Index” (0.48).

Thus, to find a multiple regression, all variables were used, since their high and sufficient relationship with the effective feature was revealed. And also there is a lack of multicollinearity between the factors.

Let's build a multiple regression (Fig.).

<i>Regression stat</i>	
Multiple R	0,984
R-square	0,968
Normalized R-square	0,963
Stand. Error	1,081
Observations	48

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Cognif. F</i>
Regres.	6	1451,679	241,9466	207,0631	4,98E-29
Remains	41	47,90718	1,168468		
Total	47	1499,587			

	<i>Coef.</i>	<i>Stand. Error</i>	<i>t-stat</i>	<i>P-value</i>	<i>Low 95%</i>	<i>Up 95%</i>
Y-intersection	153,9138	62,61183	2,45822	0,01828	27,4666	280,3609
X1 The amount of funds to support SMEs	-0,00004	0,00004	-0,89346	0,37682	-0,0001	0,00005
X2 Employed in SMEs	0	0	0,69356	0,49187	0	0,00001
X3 The number of able-bodied population	-0,01815	0,006	-3,02304	0,0043	-0,0302	-0,00602
X4 Food price index	0,22533	0,11199	2,01199	0,05082	-0,0008	0,4515
X5 GDP per capita	0,00656	0,00212	3,09467	0,00354	0,00228	0,01084
X6 Youth unemployment rate	-2,36454	0,54695	-4,32315	0,0001	-3,4691	-1,25995

Figure. Regression analysis results

Note - compiled by the authors based on data obtained using MS Excel

Figure shows:

- R-square is 0.968, which indicates a high level of influence of independent variables on the dependent one, and also indicates the high quality of the constructed model;
- The high significance of the regression equation is demonstrated by the F value, which is less than 0.05.

Let's make a multiple regression equation:

$$y = 153.9 - 0.018 * X_3 + 0.007 * X_5 - 2.365 * X_6$$

Interpretation of the resulting model:

- 1) An increase in employment per 1,000 people is accompanied by a decrease in the share of SMEs in GDP by 0.018%;
- 2) An increase in GDP per capita by 1 thousand tenge will increase the share of SMEs in GDP by 0.00656%;
- 3) An increase in the youth unemployment rate by 1% will lead to a decrease in the Share of SMEs in GDP by 2.365%.

Statistical evaluation of the model.

We calculate the table value F of the Fisher criterion and compare it with the observed F:

$F_{obs} = 207.06 > F_{crit} = 2.7$. This means that the constructed multiple regression model is reliable and statistically significant.

Let us estimate the regression coefficients for significance. We use several verification methods:

- 1) The value of P – for coefficients should be no more than 0.05. This is the probability of error. In the constructed model, the coefficients for the variables X3, X5, X6 are significant, since they correspond to the

condition $P\text{-value} < 0.05$.

2) We find the tabular value of Student's statistics and compare it with the observed value. Since $T_{obs} > T_{crit} = 2.45$ for variables X3, X5, X6, the regression coefficients b_3 , b_5 and b_6 are statistically significant.

3) If the upper and lower limits of the confidence interval have different signs for the same variable (for example, the lower 95% is positive and the upper 95% is negative), then the regression coefficients are not significant. In our model, the lower and upper bounds have the same signs of the variables X3, X5, X6, so these regression coefficients are significant.

Thus, the evaluation of the model showed that the coefficients b_3 , b_5 and b_6 have statistical significance for the variables X3, X5, X6.

The regression analysis carried out allows us to summarize the results of the study:

1) in increasing the share of SMEs in GDP, such indicators as:

- X3 – The number of able-bodied population;
- X5 – GDP per capita;
- X6 – Youth unemployment rate in %.

At the same time, factors X3 and X6 have an inverse relationship with the dependent indicator Y.

2) coefficients for variables X1 – the amount of funds to support SMEs; X2 – employed in SMEs; X4 – Food price index – not statistically significant.

This suggests that in Kazakhstan there are problems related to the support of entrepreneurship and the development of small and medium-sized businesses. To solve these problems, additional government measures are needed.

Discussions

A wide discussion of the topic of state support for entrepreneurship and the effectiveness of measures taken in this area can be observed not only in domestic, but also in foreign literature.

In the works of A.A. Ryadchin, one of the evidence of high-quality government measures in favor of business entities is the positive dynamics in the number of small enterprises (Ryadchin, 2019). In our opinion, the quantitative effect cannot give a complete picture of the effectiveness of government measures. There are many qualitative indicators, the consideration of which will lead to a real analysis of the effectiveness of the work of state bodies in relation to the development of business processes.

T. Fuller in his study offers an additional indicator of the effectiveness of state support programs – the significance of the program among subjects who want and receive assistance (Fuller, Moran, 2022). We agree with the author and believe that the introduction of this indicator of performance evaluation in Kazakhstan is possible and necessary due to the absence of any restrictions and difficulties in its implementation.

We agree with the opinion of Saginova O.V., Zavyalova D.V., Kiriyyenko A.P., Sanalina L.V., who propose to single out a mandatory list of criteria for the effectiveness of support programs: the number of SMEs per 10 thousand population; share of SMEs in total GDP; number of able-bodied population; unemployment rate; the total amount of budget expenditures for supporting SMEs per inhabitant (Saginova et al., 2019). In general, this approach is applicable to analyze the effectiveness of support measures in Kazakhstan.

Conclusions

The National Development Plan of the Republic of Kazakhstan until 2025 establishes the main directions of the state to create a diversified and innovative economy. Meanwhile, the implementation of the current policy regarding the development of entrepreneurship does not fully correspond to this goal. This fact is confirmed by the regression analysis carried out in the framework of the study. The main hypothesis about the impact of the “Amount of funds to support SMEs” on the indicator “Share of SMEs in GDP” was not confirmed. The presence of problems in the distribution of state resources requires constructive state measures to solve the existing problems. State programs aimed at the growth of SMEs do not give the expected results. Insufficient efficiency of government programs may also be due to the allocation of a limited amount of budgetary funds for priorities and approaches to support entrepreneurship.

Supporting small and medium-sized businesses is an important task for the state, as this sector of the economy plays a key role in creating jobs, stimulating innovation and ensuring sustainable economic growth. However, there are various problems and challenges that governments may face when trying to support small and medium-sized businesses: availability of funding, bureaucratic barriers, insufficient knowledge and skills in business management, tax burden, competition with large companies, lack of access to markets and customers, lack of support and advice, etc.

To solve these problems, states can take various measures, such as reducing the tax burden, providing

incentives and subsidies, training and support for entrepreneurs, simplifying bureaucratic procedures, etc.

Effective support programs should be part of a long-term economic development strategy, not temporary measures.

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А.К. Атабаева, Н.М. Лебаев, М.К. Алиев, Д.Е. Алишева, Ш.Т. Байкенжина

Кәсіпкерлікті қолдаудың мемлекеттік бағдарламаларын іске асыру: ағымдағы жағдай, талдау және ұсыныстар

Андатпа:

Мақсаты: Орта және шағын бизнестің дамуына әсер ететін факторларды анықтау, сондай-ақ Қазақстан Республикасындағы кәсіпкерлікке мемлекеттік қолдаудың әсер ету дәрежесін зерттеу.

Әдісі: Зерттеуде талдаудың статистикалық әдістері, соның ішінде көп корреляциялық-регрессиялық модельдеу қолданылды.

Қорытынды: Авторлар «ЖІӨ-дегі ШОБ үлесі» тәуелді айнымалысы мен «ШОБ-ты қолдауға арналған қаражат көлемі», «ШОБ-те жұмыспен қамтылғандар», «Еңбекке қабілетті халық саны», «Азық-түлік бағасының индексі», «Жан басына шаққандағы ЖІӨ», «Жастар арасындағы жұмыссыздық деңгейі» сияқты факторлар арасындағы байланыстың болуы туралы гипотезаларды алға тартты және сынады. Бұл гипотезаларды дәлелдеу немесе теріске шығару үшін корреляциялық-регрессиялық талдау жүргізілді. Модель айнымалыларының мультиколлинеарлылығы тексеріліп, детерминация коэффициенті есептелді. «ЖІӨ-дегі ШОБ үлесі» тәуелді айнымалы үшін R-квадрат детерминация коэффициентінің мәні жоғары мәнге ие (0,96), бұл модельге енгізілген факторлар жақсы сипаттайтынын және оған әсер етудің жоғары дәрежесін көрсетеді. Жалпы алғанда, регрессиялық талдау нәтижесінде алынған модель адекватты және сенімді екенін көрсетті.

«Еңбекке қабілетті халық», «Жан басына шаққандағы ЖІӨ», «Жастар арасындағы жұмыссыздық деңгейі»

айнымалылары бойынша статистикалық маңызды коэффициенттер анықталды, яғни аталған көрсеткіштер «ЖІӨ-дегі ШОБ үлесі» өзгертуге маңызды рөл атқарады. Бұл ретте «Еңбекке қабілетті халықтың саны» және «Жастар арасындағы жұмыссыздық деңгейі» факторлары «ЖІӨ-дегі ШОБ үлесі» көрсеткішімен кері байланыста.

Тұжырымдама: Регрессиялық талдау Қазақстанда кәсіпкерлікті дамытуға қатысты мемлекеттік саясатты жүзеге асыруда белгілі бір проблемалардың бар екенін көрсетті. Бұл факт зерттеу нәтижелерімен расталады. «ШОБ-ты қолдауға арналған қаражат көлемінің» «ЖІӨ-дегі ШОБ үлесі» көрсеткішіне әсері туралы негізгі гипотеза расталмады. Мемлекеттік ресурстарды бөлуде проблемалардың болуы бар проблемаларды шешу үшін сындарлы мемлекеттік шараларды талап етеді.

Кілт сөздер: ШОБ дамуы, ЖІӨ, мемлекеттік қолдау, бағдарламаның тиімділігі, регрессия, корреляция, факторлар, жұмыспен қамту, баға индексі.

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Реализация государственных программ поддержки бизнеса: текущая ситуация, анализ и предложения

Аннотация:

Цель: Определить факторы, влияющие на развитие среднего и малого бизнеса, а также исследовать степень влияния государственной поддержки на предпринимательство в Республике Казахстан.

Методы: При проведении исследования были использованы статистические методы анализа, в том числе множественное корреляционно-регрессионное моделирование.

Результаты: Авторами выдвинуты и протестированы гипотезы о наличии взаимосвязи между зависимой переменной «доля МСБ в ВВП» и такими факторами, как «объем средств на поддержку МСБ», «занятые в МСБ», «количество трудоспособного населения», «индекс цен на продовольственные товары», «ВВП на душу населения», «уровень молодежной безработицы». Для доказательства или опровержения данных гипотез был проведен корреляционно-регрессионный анализ. Выполнена проверка переменных модели на мультиколлинеарность, и рассчитан коэффициент детерминации. Значение коэффициента детерминации R-квадрат для зависимой переменной «доля МСБ в ВВП» имеет высокое значение (0,96), что говорит о том, что включенные в модель факторы хорошо описывают и имеют высокую степень влияния на неё. В целом, регрессионный анализ показал, что полученная модель адекватна и надежна. Статистически значимыми определены коэффициенты при переменных «численность трудоспособного населения», «ВВП на душу населения», «уровень безработицы среди молодежи», то есть перечисленные показатели играют значительную роль в изменении «доли МСБ в ВВП». При этом факторы «численность трудоспособного населения» и «уровень безработицы среди молодежи» имеют обратную зависимость с показателем «доля МСБ в ВВП».

Выводы: Регрессионный анализ показал, что в Казахстане существуют определенные проблемы проведения государственной политики в отношении развития предпринимательства. Данный факт подтверждают полученные результаты исследования. Основная гипотеза о влиянии «суммы средств на поддержку МСБ» на показатель «доля МСБ в ВВП» не подтвердилась. Наличие проблем распределения государственных ресурсов требует конструктивных государственных мер для решения сложившихся проблем.

Ключевые слова: развитие МСБ, ВВП, государственная поддержка, эффективность программ, регрессия, корреляция, факторы, занятость населения, индекс цен.

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