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The Impact of Government Performance Indicators on the Business Environment: The Case of Uzbekistan

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Abstract: The purpose of this research is to assess the impact of government efficiency indicators on the business environment of Uzbekistan. In the research, 2 indicators were selected as factors influencing the business environment, namely the Government effectiveness index and Control of corruption indicators for Uzbekistan maintained by the World Bank. In the research, the business environment was represented by the number of active enterprises per thousand labor resources. The OLS (ordinary least squares) model was used to analyze the business environment of Uzbekistan. The results of the study showed that the government's performance indicators have a significant impact on the business environment.

Keywords: business environment; government effectiveness; control of corruption; rule of law; public services; correlation; regression; OLS (ordinary least squares).

Introduction

Studying the factors affecting the business environment in different regions of the world is necessary to develop recommendations for improving the economic situation in the country. State administration in Uzbekistan is carried out on the basis of uniform laws in all regions of the country. Therefore, research on the business environment is usually conducted at the country level. After studying the domestic and foreign literature on this issue, based on the collection of basic data, we determine the factors affecting the business environment in the country.

Business environment is defined from different perspectives by different authors. A. Malach understands the business environment as the sum of all influences and factors that affect the business activity of certain enterprises. In this context, the business activity can be simplified (e.g. advantageous taxation, unambiguous law etc.) or it can be made more complicated (e.g. corruption, bureaucracy etc.) [1].

The business environment according to V. Juríčková is everything that surrounds the company, i.e. economic, political, institutional, legal, technological, ethical and also cultural conditions in which the business activity is realized and business process is conducted [2].

Studies show that the business environment of the country can be improved to a certain extent by improving the efficiency of public services [3,6].

The main purpose of this study is to examine the research questions: What factors related to the quality of public services and government efficiency affect the business environment of the country?

Methods

The creation of a favorable business environment in the country will lead to a large number of business enterprises. Therefore, we expressed the level of the business environment by the number of active enterprises per thousand labor resources in the country (1).

$$\text{Level of Business Environment (BE)} = \frac{Active\ Enterprises}{Labor\ Resources\ (\text{thousand people})} \quad (1)$$

We have selected 3 indices calculated as part of the World Bank's Worldwide Governance Indicators (WGI) project as factors affecting the business environment:

- Government effectiveness index (GE)
- Rule of law index (RL)
- Control of corruption (CC)

These 3 indices are calculated in standard normal units: approximately -2.5 to 2.5, with higher values corresponding to better outcomes [4].

The index of Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

The index for Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

The index for Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests [4].

These indicators are related to the quality of public services. In our opinion, the business environment of Uzbekistan is closely related to the quality level of public services. One of the reasons for the level of the business environment can be the quality of public services.

Table 1. The dynamics of factors affecting the business environment

Years	Active Enterprises*	Labor Resources (thousand people)**	Active Enterprises per thousand Labor Resources (Business Environment)	Government effectiveness index***	Rule of law index***	Control of corruption***
	AE	LR	BE *(AE/LR)*	GE	RL	CC
2002	130892	13181,0	9,93	-1,21	-1,44	-0,96
2003	140501	13607,2	10,33	-1,18	-1,25	-0,91
2004	136749	14048,8	9,73	-1,19	-1,34	-1,07
2005	136539	14453,2	9,45	-1,22	-1,48	-1,23
2006	137303	14816,5	9,27	-1,18	-1,45	-1,02
2007	148779	15219,6	9,78	-1,13	-1,22	-1,03
2008	173595	15685,7	11,07	-0,89	-1,17	-1,06
2009	181511	16103,5	11,27	-0,63	-1,33	-1,28
2010	200951	16726,0	12,01	-0,72	-1,42	-1,31
2011	214084	17286,4	12,38	-0,68	-1,45	-1,39
2012	228736	17564,3	13,02	-0,91	-1,30	-1,31
2013	229177	17814,1	12,86	-0,92	-1,24	-1,27
2014	241201	18048,0	13,36	-0,62	-1,13	-1,19
2015	246687	18276,1	13,50	-0,67	-1,13	-1,27
2016	257758	18488,9	13,94	-0,58	-1,12	-1,18
2017	268428	18666,3	14,38	-0,56	-1,12	-1,17
2018	285531	18829,6	15,16	-0,55	-1,09	-1,06
2019	323517	18949,0	17,07	-0,52	-1,06	-1,03
2020	398133	19158,2	20,78	-0,53	-1,08	-1,05
2021	475197	19345,0	24,56	-0,20	-0,89	-0,81

Source: ** The data of the State Committee of the Republic of Uzbekistan on Statistics, excluding dehkan farms and farms* [7], *URL: https://stat.uz/en/official-statistics/usreo;*
*** The data of the State Committee of the Republic of Uzbekistan on Statistics* [8], *URL: https://stat.uz/en/official-statistics/labor-market;*
**** The data of The Worldwide Governance Indicators (WGI) project of The World Bank* [9], *URL: https://info.worldbank.org/governance/wgi/Home/Documents*

We selected factors government effectiveness index, rule of law index and control of corruption. The data in ***Table 1*** represents the dynamics of the above-mentioned factors from 2002 to 2021. Specifically, we consider the following regression model (2):

$$BE = \alpha + \beta_1 GE + \beta_2 RL + \beta_3 CC + \varepsilon \qquad (2)$$

Here, α - intercept; $\beta_1, \beta_2, \beta_3$ coefficients reflecting the level of influence of relevant factors on the business environment; ε - error term.

Based on the purpose of the research, the following two hypotheses were formulated:

$H_0 -$ At least one of $\beta_1, \beta_2, \beta_3$ is not equal to zero. That is, the impact of at least one factor on the business environment is statistically significant.

$H_1 - \beta_1, \beta_2, \beta_3$ are all equal to zero. That is, the impact of any factor on the business environment is not statistically significant.

Results

Correlation analysis makes it possible to establish whether datasets are associated in magnitude, that is, whether large values from one data set are associated with large values of another set (positive correlation), or conversely, whether small values of one set are associated with large values of another (negative correlation); alternatively, the data of the two ranges may not be related in any way (correlation is close to zero).

The matrix of correlation coefficients between factors has the following form. In our study, we used the Gretl statistical package to analyze the data shown in ***Table 1.***

Table 2. Matrix of correlation coefficients among factors.

CC	RL	GE	BE	
1	0,4211	-0,0372	0,3128	**CC**
	1	0,7328	0,7986	**RL**
		1	0,8395	**GE**
			1	**BE**

Linear regression analysis consists of fitting a graph for a set of observations using the least squares method. Regression is used to analyze the impact of the values of one or more independent variables on a single dependent variable. The first step in any regression analysis is analyzing the structure of the dependent and independent variables. We created the three-factor linear regression model mentioned above in ***Table 3.***

Table 3. The results of (BE|GE,RL,CC) OLS model.

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	33,1026	3,73628	8,86	<0.0001	***
GE	10,0189	2,40665	4,163	0,0007	***
RL	2,66077	4,89495	0,5436	0,5942	
CC	7,57098	3,56076	2,126	0,0494	**

The p-value of the Rule of law (RL) factor is not statistically significant at the 95% confidence level because p-value>0.05.In addition, we can see in ***Table 2*** that the Government Effectiveness (GE) and Rule of Law (RL) factors are correlated very strongly (according to Chaddock's scale of correlation, coefficient of correlation above 0.7 is considered strong). Therefore, we excluded one of the strongly correlated factors (RL) from the potential regression equations in order to avoid a multicollinearity problem.

Table 4. The results of (BE|GE ,CC) OLS model.

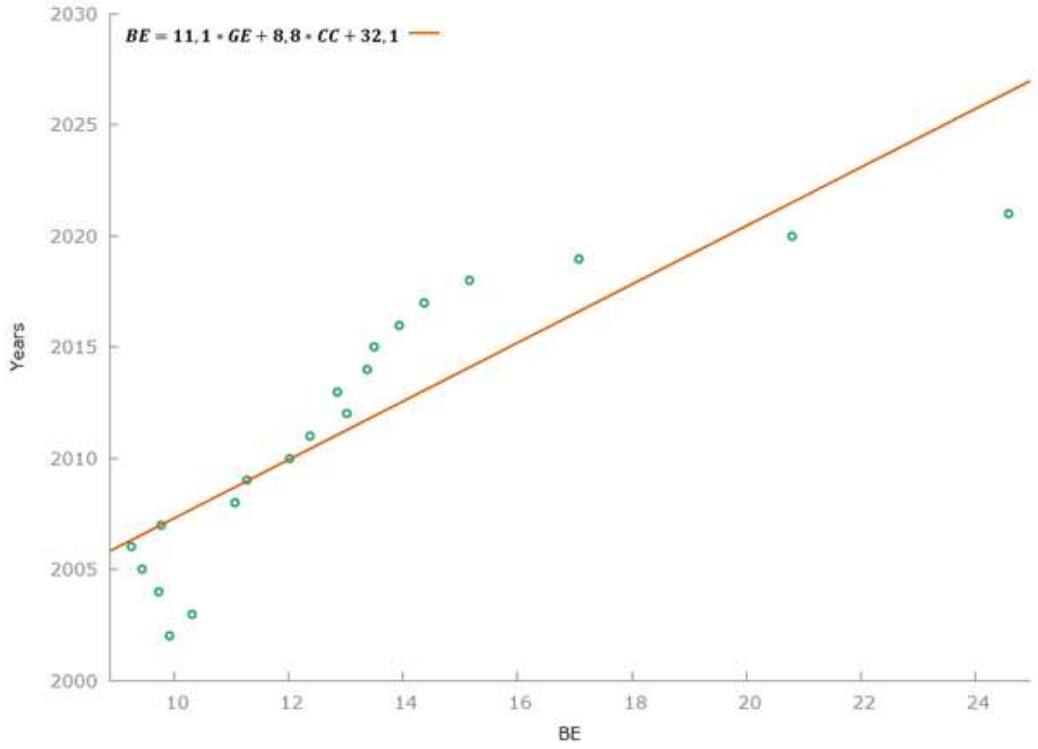
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	32,1285	3,20989	10,01	<0.0001	***
GE	11,0993	1,32872	8,353	<0.0001	***
CC	8,84743	2,62065	3,376	0,0036	***

Mean dependent var	13,19354	**S.D. dependent var**	3,908652
Sum squared resid	51,30289	**S.E. of regression**	1,737187
R-squared	0,82326	**Adjusted R-squared**	0,802467
F(2, 17)	39,5933	**P-value(F)**	4.00e-07
Log-likelihood	−37.79892	**Akaike criterion**	81,59784
Schwarz criterion	84,58503	**Hannan-Quinn**	82,18097
rho	0,412448	**Durbin-Watson**	1,163194

From **Table 4**, we can see that each factor is statistically significant at the 98% confidence level according to the results of the p-value. R-squared is 0,82. So, government effectiveness (GE) and control of corruption (CC) factors represent 82% change of business environment (BE). The two-factor linear regression model affecting the business environment of Uzbekistan (the number of active enterprises per thousand labor resources) has the following algebraic form (3):

$$\boldsymbol{BE = 11,1 * GE + 8,8 * CC + 32,1} \quad (3)$$

Figure 1. Two-factor linear regression graph [(BE|GE ,CC) OLS model]



We used White's test to test for heteroskedastic ("differently distributed") errors in the regression analysis. The White test is a statistical test that establishes whether the variance of the errors in a regression model is constant. This test, and an estimator for heteroscedasticity-consistent standard errors.

According to White's test, the p-value was 0,52. Since this coefficient is greater than 0,05, the variance of the residuals is similar. The model is statistically significant.

Discussion

The results of our research showed that the business environment in Uzbekistan, that is, the number of active enterprises per thousand labor resources, is significantly influenced by the data of the World Bank: the efficiency of state activity and the index of the fight against corruption. These two factors are related to the quality of public services. These factors can explain 82% of the change in the business environment of Uzbekistan. According to the model obtained as a result of the research, if other factors remain unchanged, when the Government effectiveness index of the World Bank for Uzbekistan increases by 1 unit, the number of active enterprises per thousand labor resources of

Uzbekistan will increase by 11,1. Or when the World Bank's Control of corruption indicator for Uzbekistan increases by 1 unit, the number of active enterprises per thousand labor resources of the country increases by 8,8.

The result of the research shows that indicators such as the quality of public services and the efficiency of the government are important in creating a favorable business environment in the country. In conclusion, it can be said that countries can make their territories attractive to capital owners by improving public services and reducing corruption.

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