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What are the main obstacles for the business in Kazakhstan and how do firms' characteristics affect the probability of facing them?

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Abstract

Conducive business environment significantly contributes to the economic growth of any country. Governments constantly work towards creating a favorable business environment by enhancing business strategies, improving technologies and simplifying business processes. However, businesses are still forced to fight with a variety of obstacles on their path.

A purpose of this paper is to explicate how firms' characteristics affect the probability to face any potential barrier in Kazakhstan. The regression built during this research is a way to analyze the likelihood of occurrence of particular barriers based on firms' characteristics. Evidence is reported from the 2019 World Bank Enterprise Survey and is being used as a secondary data for building a model. The model draws attention to the obstacles from the characteristics angle while the lessons learnt may serve as a ground for future research dedicated to analyzing business related aspects.

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Introduction

Improvement of the economic situation in the country largely depends on the development of entrepreneurship, which according to OECD (1998) is central to the functioning of a market economy. New business formation was a rare phenomenon in the 1900s (Howard & Van, 1999). However, the contemporary competitive and well-saturated market is a result of improving business strategies, newly invented technologies and huge investments, respectively. Moreover, entrepreneurial activity itself creates workplaces, which can reduce unemployment, saturate the market with goods and services, contribute to the creation of competition, generate innovations, increase taxable incomes for the government, and contribute to economic growth and development. That is why economies around the world are keen to make reforms to ease the process of doing business (Jabeen, Ali & Yusuf, 2021), but still different problems arise. There are numerous factors that impede the development and growth of businesses around the world such as uneducated labor force, competition with the informal sector, limited access to finance, and land, tax rates, tax administration, corruption, and political instability that companies can face. Obstacles may vary depending on the country where the firm is registered. For instance, the main barriers to companies identified in Russia and Bulgaria are limited access to land and finance (Pissarides, Singer & Svejnar, 2003) while in Ghana companies have very limited access to finance and electricity (Mohammed & Bunyaminu, 2021). Tax laws, legal issues and non-availability of resources are the most considerable obstacles in running a business in India (Jabeen, Ali & Yusuf, 2021).

Along with region, barriers may differ based on characteristics of the company. It is uncommon to think that larger firms face big problems while smaller ones meet small problems. According to Beck (2007), small and medium sized firms have a higher probability to face limited access to finance than larger firms. Chavis, Klapper and Love (2010) claim that for firms that operate less than 3 years in the market the main constraint is access to finance. Thus, various firms face different obstacles.

Therefore, it is important to understand which obstacles companies face while doing business and which companies, based on their characteristics, are more likely to face those obstacles. This is the idea behind this study that aims to answer these questions with regard to Kazakhstan. To achieve our objective the data of the Enterprise Survey conducted by the World Bank in Kazakhstan in 2019 was used. With this data, we seek to reveal the differences between firms for which those problems are the most harmful.

We start with reviewing and discussing the literature regarding obstacles to firms' operations and the World Bank Enterprise Survey. Then we build the probit model using the data provided by the World Bank to analyze a likelihood of experiencing the obstacles listed by the companies surveyed by the World Bank, as described in the "Research Methodology" section. Finally, we interpret and discuss the obtained results.

1. Literature Review

The key source of this paper is the Enterprise Surveys conducted by the World Bank (2019). The ES found that firms in Kazakhstan experience three main obstacles to their activities; these are the practice of the informal sector, tax rates, and low-skilled workforce (World Bank, 2019). Within the ES, a rich data on participating companies' characteristics was collected, such as company size, company age, location, sector. This data was used to estimate whether those firms' characteristics somehow affect a likelihood of facing the reported problem.

In addition, it is a vast amount of literature that indicates different obstacles firms face.

Firstly, hindered access to finance. Louis & Macamo (2011) assume that the impact of financial barriers is more perceived in comparison with social and other external obstacles. The absence of financial problems at the beginning of the business path promises successful continuation. Companies have troubles with providing finance to operate the business, especially small and medium sized businesses face this problem. According to Krasniqi (2007), credit policies and collateral requirements

prevent small and medium-sized firms from obtaining credit from banks, as they are likely to lend larger companies, whose ability to provide collateral is higher.

Secondly, Anderson (2012) mentions access to land as a serious obstacle all around the world. The quality of infrastructure in a country directly affects the ability of a business to function. This includes permanent access to electricity, water and telecommunications. Frequent interruptions can disrupt production, increase costs, and thus slow down a company's growth.

Thirdly, uneducated or unqualified employees can be a problem to business. Following Shah (2013), the main problem for many companies is the shortage of skilled workers and core competency, especially in technical and specialized jobs. Companies that have a skilled and educated workforce are more likely to be efficient (Hewitt & Wield, 1992).

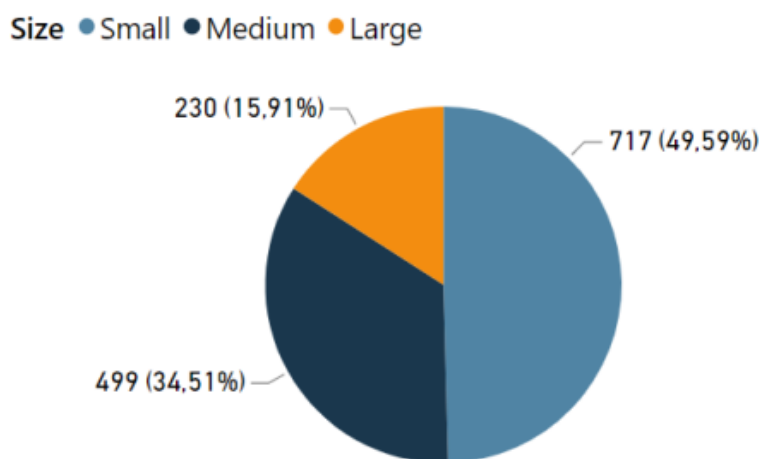
Fourth, La Porta and Shleifer (2008) state that approximately 50% of economic activities in developing countries relate to the informal sector, which means that the informal sector is a serious threat to businesses. According to the Enterprise Survey it is highly important for businesses to be officially registered for their long-term path. Unregistered companies might have an advantage over officially registered ones that comply with existing rules, policies and regulations. Through tax evasion schemes, they provide themselves with higher revenues that can be used for business purposes; moreover, they congest infrastructure and other public services generating a free-rider problem in the economy (Slonimczyk, 2014).

In addition, Wang (2016) analyzed whether the characteristics of small and medium sized firms in developing countries affect the probability of facing the obstacles. By the results obtained, the likelihood of facing the problems for older and larger companies in the developing countries is smaller compared to younger and smaller companies. Our research will test whether these results are also relevant for Kazakhstan.

2. Data

This paper uses the cross-sectional data provided by the World Bank in 2019 about companies located in Kazakhstan. 1446 companies in total from different sectors and regions participated in the survey. The questions were about the difficulties they experience while running their businesses and the general company characteristics in order to acquire a more complete picture of the business. Based on the collected data the entities have following characteristics that will be used in our research:

Figure 1. Firms' size



Number of employees that officially work in the company defines its size. According to the World Bank small entities have from 5 to 19 employees, medium entities have from 20 to 99 employees, while in large companies more than 100 workers are employed. As can be seen on Figure 1, 717 small, 499 medium and 230 large entities participated in the survey.

Figure 2. Age distribution

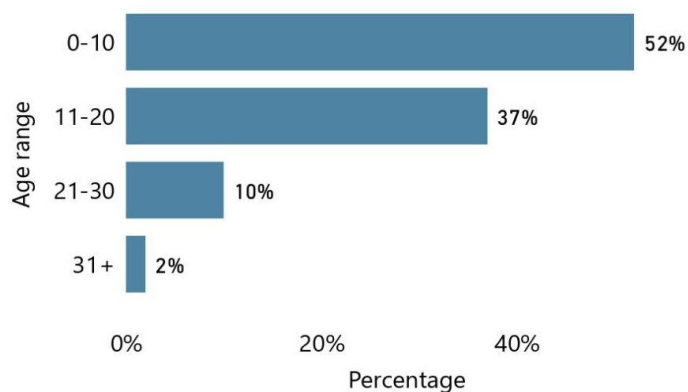
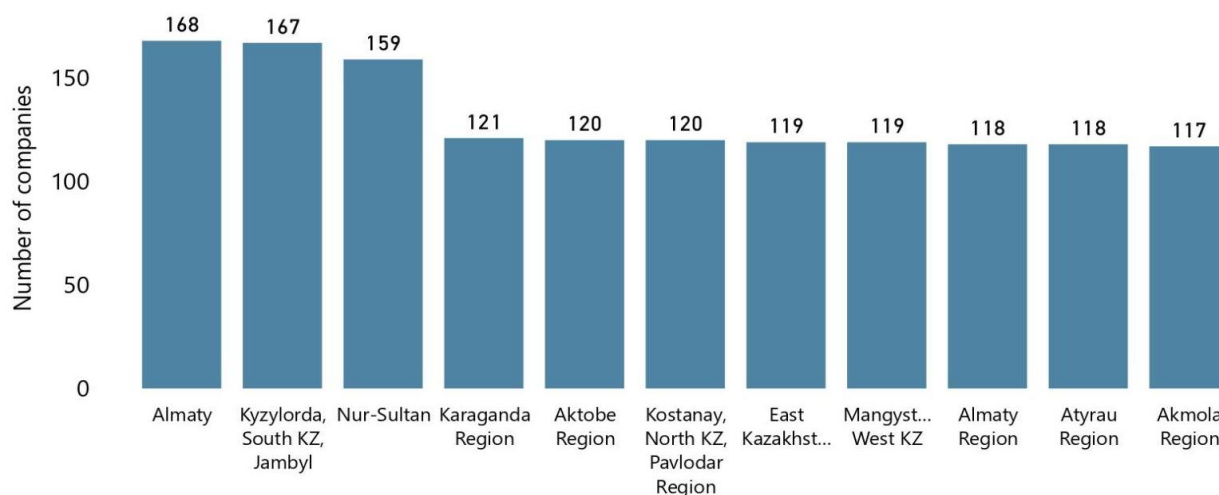
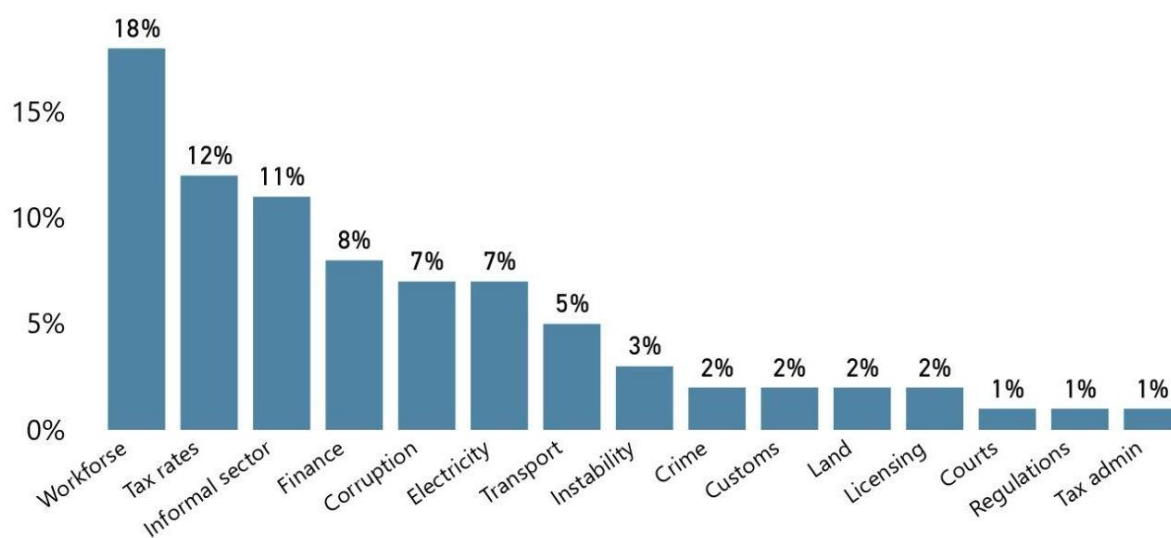


Figure 3. Firms' location



Also, other important characteristics used in our research are the location, age, growth rate and top managers' experience. Figure 2 and 3 show age distribution and the number of companies in each region respectively.

Figure 4. Main obstacles to firms in %



As a result of a survey conducted by the World Bank, 15 main obstacles for enterprises were identified. The companies rated each obstacle according to a scale from 0 to 4 which corresponds with answering from “no obstacle” to “very severe obstacle”. Figure 4 represents the main obstacles for the entities in percentage.

It can be seen that major obstacles that the companies face the most are inadequately educated workforce, competition with the informal sector and tax rates. That is why those three problems are chosen for our model as dependent variables.

3. Research Methodology

In this research the maximum likelihood method is used in order to test the probability of facing main obstacles depending on the characteristics of firms. The probit model for our study is:

$$Obstacle = \beta_0 + \beta_1 * Region + \beta_2 * Size + \beta_3 * Age + \beta_4 * Experience + \beta_5 * Growth + e$$

This model is applied for all three main obstacles identified before.

Obstacle - main obstacle to current operations, dependent variable. As it was mentioned earlier, obstacles are ranked from 0 to 4. To suit the model, this variable is converted into a dummy variable, where “0”, “1”, “2” are taken as minor obstacles and converted to “0”, while “3” and “4” are grouped as major obstacles and identified as “1”.

e - error term.

Characteristics are taken as independent variables and converted to binary variables to find the probability of encountering main obstacles:

Region - location of an entity. Regions are grouped into five groups: “western” (Aktobe, Atyrau, Mangystau and West Kazakhstan regions), “southern” (Kyzylorda, South Kazakhstan, Jambyl and Almaty regions), “northern” (Kostanay, North Kazakhstan and Pavlodar regions), “central” (Akmola, East Kazakhstan and Karaganda regions), “metropolis” (Nur-Sultan and Almaty).

Size - size of a firm based on the number of employees. Size is divided into three groups: small, medium and large.

Age - age is calculated starting from the year of official registration of the entity. Age is grouped by the range of ten years (“1-10”, “11-20”, “21-30” and remaining is grouped as “30+”).

Experience - this variable represents the working experience of top management of the company; we control for this variable to understand how the management's experience affects the

probability of having the problems. The experience is converted to binary variables and grouped in the same manner as the variable “Age”.

Growth - the last characteristic taken for the model is growth rate. This variable shows how annual sales growth affects the likelihood of occurrence of the problem. Growth rate is categorized as “Fast Growth Rate”, “Moderate Growth Rate” and “Slow Growth Rate”.

In the “Results and discussion” section the models estimating the likelihood of an obstacle to occur based on the firms’ characteristics are presented and interpreted.

4. Results and discussion

In Table 1, the results of the probit model for three main obstacles (competition with the informal sector, inadequately educated labor force, tax rates) are shown. The table reports average marginal effects computed with the “margins” command in R after estimating three probit models. Average marginal effects should be interpreted as elasticities or a percentage change in a dependent variable as a result of the change in an independent variable by one unit.

We will provide interpretations for each explanatory variable in a separate subsection.

Table 1. Regressions’ results
Dependent variables

	Workforce	Informal Sector	Tax Rates
Central regions	0.318*** (0.134)	0.165*** (0.137)	0.068** (0.143)
Northern regions	0.120** (0.168)	0.120*** (0.184)	0.080** (0.207)
Southern regions	0.243*** (0.131)	0.131*** (0.139)	0.069** (0.147)
Western regions	0.144*** (0.124)	0.128*** (0.134)	0.136*** (0.170)

Large companies	0.086 (0.162)	0.110** (0.186)	0.014 (0.200)
Medium companies	-0.005 (0.101)	0.078*** (0.112)	-0.008 (0.119)
Age (1-10)	-0.051 (0.105)	-0.016 (0.113)	-0.059** (0.128)
Age (21-30)	-0.040 (0.151)	-0.078* (0.157)	-0.090** (0.176)
Age (30+)	-0.030 (0.304)	-0.004 (0.354)	-0.263*** (0.311)
Experience (11-20)	-0.143*** (0.105)	-0.056* (0.114)	-0.078*** (0.125)
Experience (21-30)	-0.150** (0.160)	-0.134** (0.167)	-0.006 (0.200)
Experience (30+)	-0.100 (0.212)	-0.098 (0.228)	-0.023 (0.249)
Fast Growth Rate	-0.048 (0.118)	-0.125*** (0.124)	-0.001 (0.148)
Slow Growth Rate	0.058 (0.100)	0.052 (0.115)	-0.007 (0.121)
Observations	991	971	970

Note: *p<0.1; **p<0.05; ***p<0.01

4.1. Region

Region is the first explanatory variable. 14 country provinces (*oblasts*) are grouped in five larger geographical regions: “western”, “southern”, “northern”, “central”, “metropolis”. Reference group for the variable “region” is the metropolis, which includes Nur-Sultan and Almaty.

As it can be seen, most of the region coefficients are positive and statistically significant, which means that no matter in which region the company is located, there is anyway a probability of encountering those obstacles in a greater extent than in Nur-Sultan and Almaty. There is, however,

heterogeneity across the other regions as well, for instance, the entities in central Kazakhstan are more likely to face the problem of an uneducated labor force compared to Nur-Sultan and Almaty (32%). This can be explained by the amount and the quality of university education. As in Nur-Sultan and Almaty there are a higher number of students and graduates from top universities than in Central Kazakhstan. According to IAC (2017) the number of students in Nur-Sultan and Almaty in total is 183 661 in 2017, while in the Central Kazakhstan the number is 81 404. This could also be driven by internal migration since the current and the former capital cities being the best-paid destinations and possibly most attractive cities to live in, pull the most educated people from across the country.

Differences across cities might in turn be driven by the regions' industrial structures. For example, the central part of the country is more industrialized than the northern and the southern and therefore likely requires a more educated workforce.

Also, competition with the informal sectors is statistically significant for all independent variables, and in any of the regions, the probability of facing this problem is higher by more than 10% compared to Nur-Sultan and Almaty. That means that in those regions there are more companies that are not officially registered and avoid taxes, which seems reasonable, as regulations are likely more strict in metropolises. On the other hand, companies of Nur-Sultan and Almaty might be wealthier and therefore might suffer from competition with the informal sector to a lesser extent.

The relationship between tax rates and regions is also positive and statistically significant for each group. However, in Western regions, the likelihood of facing the obstacle is higher compared to Metropolis by about 14% which is higher than in other regions. This can be explained by better tax regulations or better economic conditions contributing to higher economic performance in those cities compared to the rest of the country.

4.2. Size

The next variable of interest is the size of the company.

According to the World Bank's Enterprise Survey (2019), the size of the company is determined by the aggregate indicator of permanent and temporary employees. Small firms include 5 – 19 workers, medium firms 20 – 99 workers, while large 100 and more. As a reference we used small sized firms to compare larger firms with small ones.

Among the models, only the informal sector model produces statistically significant coefficients, while the relationship between workforce and a company size and tax rates and a company size are statistically insignificant.

The probability of encountering the problem of unfair competition with the informal sector is 7.8% greater for the medium-size firms and 11% greater for the large firms compared to the small firms.

The statistically significant result for the informal sector model seems counter-intuitive. The informal sector companies are predominantly small companies, and, on the other hand, in the formal sector, smaller companies should be more negatively affected by the competition with the informal sector; however, our result is completely opposite: the larger is the company the larger is the likelihood to list the informal sector as an obstacle for doing business. An alternative explanation for this phenomenon might be the fact that larger firms pay greater taxes and because of that, they might feel more disappointed by unfair competition with the informal sector (Mohammed and Bunyaminu, 2021).

4.3. Age

Next, we interpret the probability of experiencing one of the main obstacles to doing business depending on the age of a company.

The age is determined by the length of time, in years, that the companies have been in operating condition. As a reference group we used firms with the age between 11-20 years to compare them with the groups of less than 10 years, between 21-30 and more than 30 years.

According to the table, all variables of age of firms have negative results, which means that they have low probability to face these obstacles. However, only tax rates variable in 3 types of ages are statistically significant, which means that the group of more than 30 years has the lowest probability, and the reference group has the highest probability. In general, older firms are found to be less prone to be negatively affected by the tax rates. This is consistent with the expectations and explained by the fact that the impact on this probability depends on the experience and durability of the company itself. Since older firms successfully navigate the environment by their ability (The World Bank, 2019).

4.4. Experience of Top Managers

The next characteristic to be considered is the number of years of top management working experience in the sector.

The selected characteristic was divided into four groups: companies with up to and including 10 years of top management experience, 11 to 20 years inclusive, 21 to 30 years inclusive, and more than 30 years of experience in the sector. The top management with 10 years of experience and below was selected as a reference group against which the figures of other groups will be compared.

According to the model, coefficients of the variables related to top manager's experience in general are significant with regard to all listed obstacles. However, when the variables are considered individually, the results become statistically insignificant in analyzing the probability of encountering these obstacles by companies, whose top manager's experience in the sector exceeds 30 years. In addition, the results are also statistically insignificant for businesses, whose top management's working experience in the same sector exceeds 20 years when it comes to the perception of tax rates as a barrier to operating a business.

By comparing the reference group with others, it can be seen from the table that companies whose top managers have less years of experience are more likely to face all of the obstacles presented than those with more work experience. In particular, the possibility of dealing with the obstacle in the form of an inadequately educated workforce is 14% lower for companies with top management with 11 to 20 years of experience and 15% lower for those with 21 to 30 years of experience compared to the reference group. According to the table, there is no significant difference (6%) in the likelihood of an obstacle, such as competition with the informal sector, between companies whose top managers have less than 10 years of experience inclusive and companies whose top managers have 11 to 20 years of experience. However, the results are almost doubled compared to the group with 21 to 30 years of top managers' working experience. In other words, the probability of encountering this obstacle decreased by 13% compared to the reference group. Also, as it can be seen from the model, there is only one statistically significant coefficient for the dependent variable, which is the obstacle in the form of tax rates, and the independent variable, which is the group of companies, whose top management has 11 to 20 years of experience. Compared to the reference group, this group is less likely to perceive tax rates as a problem by 8%. This can be explained by experienced top managers' ability to take advantage of tax shields by restructuring the capital structure of the firm (Matemilola et al., 2018).

In this way, obtained results may indicate that with each year of experience in the sector, the manager's knowledge and expertise in overcoming listed obstacles, such as inadequately educated workforce, competition with the informal sector, tax rates, increases, that they are no longer perceived as significant obstacles for doing the business.

4.5. Growth of Sales

Finally, we look at how the annual sales growth of companies affects the probability of encountering the obstacles listed. This characteristic was presented in percentage terms which represent businesses' expected annual change in total sales next year, and for probit model percentages were grouped into 3 categories. Businesses, whose growth is expected to be lower than 16 % were classified

as slow growth companies, from 16% to 45% inclusive were allocated to moderate growth companies, and the last group is fast growth companies with more than 45% expected raise in annual sales.

Businesses with moderate growth were selected as a reference group for this probit model, which means that the figures of other groups will be compared against this group.

According to the table, results of the probit model are statistically insignificant for analyzing slow growth companies with regard to all listed obstacles, and fast growth companies for obstacles, such as inadequately educated workforce and tax rates.

As it can be seen, a group with high-growing companies is presented as statistically significant when it comes to the problem of competition with the informal sector of the economy. In particular, companies with less sales growth have a 13% higher probability to face this obstacle, than firms with high sales growth. In this way, the results indicate that the possibility of encountering an obstacle in the form of competition with the informal sector becomes lower as the growth rate of companies increases.

Conclusion

One of the pillars of a country's economic development is the entrepreneurial process (Schumpeter, 1911). Therefore, it is important to maintain a business environment. Even though all companies around the world face different obstacles from year to year. Based on a result of a research, major obstacles that the companies face the most in Kazakhstan are inadequately educated workforce, competition with the informal sector and tax rates. Our research focused on whether some firm features can explain the probability of encountering these most frequent problems businesses in Kazakhstan face. This might help to understand the nature of such obstacles and what companies should be given priority in government measures and policies addressing those obstacles.

The results obtained from the probit models suggest certain patterns that deserve attention. Companies located in Nur-Sultan and Almaty have fewer problems compared to other regions. Moreover, it can be concluded that older firms with more experienced top managers that have a higher sales growth rate are less likely to face the obstacles. In addition, larger companies have higher

probability to mention a competition with the informal sector as one of the main obstacles for doing business, which is a rather unexpected result. A possible explanation for it is that they pay higher taxes, more heavily contribute to the production of public goods and, therefore, freeriding costs are higher for them. Thus, the government actions aimed at mitigating those obstacles should predominantly target younger, less experienced companies located outside of Nur-Sultan and Almaty, as well as strive to reduce unfair competition with the informal sector.

With our study, we managed to understand the nature of the obstacles limiting the performance of the companies in Kazakhstan with the data collected by the World Bank. The results obtained are well-justified. The study is relatively novel for the context of Kazakhstan and useful as it allows to draw rigorous and policy applicable conclusions.

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