potential. Therefore, in order to solve the mentioned problem, systematic ways by combining quantitative and qualitative methods with potential components and economic efficiency have achieved reasonable results.

*Keywords:* labor potential, increasing efficiency, enterprise efficiency, aggregate indicator, quantitative assessment, calculation of labor potential.

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## KAZAKHSTAN'S PUBLIC PROCUREMENT LANDSCAPE: AN IN-DEPTH REVIEW OVER TWO YEARS

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## ABSTRACT

*Purpose* of the study is to analyze the public procurement market in Kazakhstan, identifying key trends, factors influencing contract failure, and regional variations in procurement practices.

*Methodology*: We examined nearly 3.9 million procurement contracts, employing descriptive statistics to overview market characteristics and using Generalized Linear Model regression analysis to identify factors affecting contract failure. The study focused on variables such as local production share, contract sum, procurement method, and regional differences.

*Originality/Value*: This research contributes to the limited literature on public procurement in emerging economies, offering a comprehensive analysis of Kazakhstan's procurement landscape. It provides valuable insights for policymakers and practitioners, highlighting areas for potential improvement in the country's procurement system.

*Results*: The study identified several key findings: (1) a high proportion of contracts marked as "changed," likely due to software structure rather than actual modifications; (2) a 4% contract failure rate, with failure more common in larger contracts; (3) requests for proposals emerging as the dominant procurement method (52% of contracts), reflecting a shift towards competitive bidding; (4) minimal growth in single-source procurement, consistent with government transparency efforts; (5) a negative correlation between local production share and contract failure, supporting the hypothesis that domestic suppliers contribute to contract stability; (6) unexpectedly lower failure rates in single-source contracts, suggesting supplier familiarity and pre-negotiation reduce risks; and (7) significant regional disparities in contract failures, indicating local administrative and

market influences. These findings suggest the need for further research on competitive bidding, and investigation into factors contributing to the success of single-source contracts.

*Keywords*: Public procurement, local production, market concentration

**INTRODUCTION**

Public procurement, the process by which governments buy goods and services, is a key part of Kazakhstan's economy. It plays a major role in how the government operates and spends its budget. Public procurements plays crucial role in the national economy it takes part of 12-14% of GDP [1, 2] and it has been thoroughly researched on the data from US [3] and EU [2, 4, 5].

The objective of the awarding process is the conclusion of a contract with the “best” supplier who meets all the requirements and offers the performance at the lowest cost [6]. Digitalization of procurement works better in countries with well-developed institutes [4] and therefore it is important to have quality rules of game and good legal practice for specialists to become hosts of key ideas and aims of government policy in procurements. The level of digitalization in Kazakhstan shows great results recently as shown in the results of rankings on digitalization and level of e-government. That amount of data gets more accessible on the policy of open government. It is time to get valuable research similar to those from the EU and US. Using the documentation of goszakup.gov.kz for developers we obtained a token to get access to that data and configured inflow of data from that source.

In recent years, Kazakhstan has seen various changes, including an update of the public procurements law [7] in its public procurement practices. This paper aims to explore these changes and understand their implications. There are a lot of papers analyzing public procurements based on the open data from the US and EU mainly focused on trade barriers.

We focus on a two-year period, from 2021 to 2022, examining the types of procurement methods used, their success rates, and the financial outcomes of these methods. We divide them into two groups of methods by the competition level – whether it is competitive procurement or from a single source. By looking at a large amount of data from government contracts, this study seeks to identify general trends within 2 year span, assess the effectiveness of different procurement methods by the relationship between fail of the contract to other parameters provided in the database, and understand the financial impact of these methods on local production.

Research questions

1. What are the key characteristics of public procurements in Kazakhstan from 2021 to 2023, focusing on contract volume, types, and sectoral distribution?
2. What trends emerge in Kazakhstan's public procurement data from 2021 to 2023, particularly regarding contract size, duration, and regional distribution?
3. To what extent do factors such as contract size, procurement method, region, budget source and supplier characteristics influence the likelihood of contract cancellation or non-completion in Kazakhstan's public procurements from 2022 to 2023?

This analysis can be helpful as a data driven approach to help to see how well the government's procurement decisions align with its goals of efficiency and economic growth. The findings from this study are expected to provide valuable insights for policymakers, businesses, and scholars interested in the public procurement system of Kazakhstan as well as for other researchers interested in public procurement deep data analysis.

Reading latest papers with their findings in the public procurement area we search for similar data and do similar research on local data and where possible go deeper into the analysis.

Importance. Public procurement in Kazakhstan is seeing frequent updates in recent years [7] addressing the problems of competition, clear and fair rules of the game, quality assessment of purchased goods, services and works. In recent messages to the people the President of the Republic of Kazakhstan highlighted such problems of public procurement as long procedures, endless appeals, insufficient transparency [8]. The main priorities for the near future were defined as simplification, speeding up, priority of quality over price, protection from dumping and automatization of procurement process [8]. One of the tools of government to influence, for example, small enterprises via rapid increase of demand [9,10].

The key principles in the law are optimal spendings of the budget, equality of opportunity for suppliers, fair competition in procurement market, transparency of government procurement process, support of local producers, responsibility, preventing corruption, acquisition of innovative and high-tech goods, works and services, compliance with rights to intellectual property [7] Although in the law there are rules that add conditional price which reduces actual bid price based on several characteristics of a bidder [7].

**Literature Review.** Public procurement is a complex field with various theoretical frameworks applicable to its study. For our analysis of Kazakhstan's public procurement system, we primarily draw upon two key theories: Principal-Agent Theory and Game Theory [2, 1].

Principal-Agent Theory provides a valuable lens through which to examine the current state of public procurements in Kazakhstan. This theory, as described by Thai [11], explores the challenges and conflicts that arise when one party (the agent) acts on behalf of another (the principal), particularly when information asymmetry or differing interests exist. In the context of public procurement, this theory helps us understand the relationship between the government (principal) and suppliers (agents), which is crucial for addressing our first and second research questions.

Complementing this, Game Theory offers insights into the strategic decision-making processes of both government entities and suppliers in competitive procurement scenarios [6]. This theoretical framework is particularly relevant to our second and third research questions, as it can help explain interesting features in the data and reasons for contract failure.

Recent research has highlighted several key issues in public procurement that are pertinent to our study. Zhang [12] explored alternative bid assessment methods beyond simple price comparisons, which could provide insights into the features we might observe in Kazakhstan's procurement data.

Of particular relevance to our third research question is the work of Casady et al. [1], who examined the problem of procurement cancellations and associated transaction costs. Their finding that about 25% of procurements are canceled in Denmark provides a benchmark against which we can compare Kazakhstan's figures. Moreover, their identification of administrative capacity and lack of competition as main reasons for cancellation offers potential factors to consider in our analysis of contract failures.

The issue of supplier consolidation, as discussed by Carril and Duggan [13], and the impact of economic integration and trade agreements on procurement practices [2, 8, 14] may provide additional context for understanding any unique features we observe in Kazakhstan's procurement landscape.

Furthermore, recent research highlights the persistent issue of corruption in Kazakhstan's public procurement system. Khamitov et al. [15] argue that corruption is deeply entrenched in procurement practices, with both public officials and suppliers complicit in fraudulent activities. Their survey of goszakup.gov.kz users found that an overwhelming 98% of respondents admitted to paying bribes, illustrating the systemic nature of the problem. Despite government efforts to implement anti-corruption measures such as e-procurement and increased transparency, these initiatives have had limited success. The authors suggest that corruption in public procurement is not merely a technical issue but a structural one, rooted in the post-Soviet bureaucratic culture that perpetuates informal networks and clientelism. These findings reinforce the need to examine corruption as a critical factor affecting procurement outcomes, particularly in relation to contract failure and market competitiveness in Kazakhstan.

What affects local production?

Following our initial findings, we can formulate hypotheses on the relationship between local productions and fail rate. Contracts with local producers are less likely to be canceled as the risk of international logistics and customs procedures are inexistent [1]. Also, we saw in our previous section that overall successful contract held in non-competitive regime are higher in numbers than failed ones, so we formulate first hypothesis:

Hypothesis 1: There is an inverse relationship between the percentage of local production in public procurement contracts and the rate of contract failures, such that an increase in share of local production of contract is associated with a decrease in the failure rate of contracts.

This literature review sets the stage for our examination of public procurement in Kazakhstan. By applying these theoretical frameworks and insights from recent research, we aim to provide a comprehensive analysis of

the current state of public procurements in Kazakhstan, identify interesting features in the data, and explore the reasons for contract failure. This study will contribute new understanding to the field of public procurement, particularly in the context of an emerging market economy.

**Methodology**

This study conducted a detailed analysis of public procurement in Kazakhstan over two years (2021-2022). The research focused on three main areas, corresponding to our research questions: (1) the current state of public procurements, (2) distinctive features of the procurement system, and (3) factors contributing to contract failure.

*Data Collection*

We retrieved data from official government records (goszakup.gov.kz) after obtaining an official API access token. We collected approximately 5 million records using PHP-based programming tools. Each record contained information about procurement methods, contract success, costs, and other relevant details.

*Variables*

As we are processing contracts information based on their creation time we tried to scope further from the time of data retrieval (November of 2023) we cut on March 1. Due to the limit of computing capacity we can not choose a sufficiently large timeframe we chose a period of 2 years. We analyzed 3,890,718 contracts created between March 1, 2021, and March 1, 2023. The key variables included:

- Failed: A binary indicator of contract failure based on status keywords. Based on the possible statuses of contracts we distinguished three groups of contracts - In progress, Executed, Failed. After that we excluded In progress contracts and remaining 2 groups were transformed to a dummy variable indicating whether a contract failed or not.
- Non-competitive: Identifies procurement methods from a single source. Based on methods that we show in the findings section we grouped them to 2 distinct groups of competitive and single source contracts.
- Contract_ms: Percentage of local production content (0-100).
- Contract_sum_wnds: Total contract sum including VAT.
- Created_date: Date of contract creation.
- Funding source variables: A set of dummy variables indicating the financial source of the tender.

*Analytical Approach*

*Current State Analysis:*

- We used MySQL queries to aggregate data on contract numbers, values, and procurement methods.
- We calculated success rates for different procurement methods.
- We compared data between 2021 and 2022 to identify potential trends.

*Distinctive Features Identification:*

- We analyzed the distribution of contracts across different statuses and procurement methods.
- We compared our findings with international benchmarks where available.

*Contract Failure Analysis:*

- We employed a Generalized Linear Model (GLM) to identify factors contributing to contract failure.
- Independent variables included procurement method, local production share, contract sum, and funding source.

*Statistical Tools*

We used R statistical software for our regression analysis and to generate descriptive statistics. While the two-year period is relatively short for definitive trend analysis, the large dataset allows for robust statistical inference about the current state and characteristics of Kazakhstan's public procurement system.

This methodology allows us to address our research questions systematically, providing a comprehensive view of Kazakhstan's public procurement landscape, its unique features, and the factors influencing contract outcomes.

**Results and findings**

1. *Current State of Public Procurements in Kazakhstan (2021-2022)*

Our analysis of 3,890,718 contracts from March 2021 to March 2023 reveals that the number and types of contracts awarded by the government varied significantly. Some procurement methods became more popular, while others were used less. This indicates a shift in how the government approaches procurement, possibly due to changes in policy or market conditions.

In the figure 1 we can see the distribution of contracts by statuses, which was retrieved in the period of 2 years. We decided to focus on the number of contracts that have particular statuses and the average sum of the contract to analyze the relationship between contract size and its status. It worth noting that contracts with status "Transmitted.Valid" which means they are in progress have the highest average contract sum of 116 million KZT and small number of overall contracts of 5 859 contracts, after consulting with the experts in the area we found that those are large projects that are multi year projects. Analyzing the list of status names we can divide them into three groups –in progress, executed, and terminated contracts. Our main focus would be the second and third group identifying whether the contract was successful or not to conduct further analysis of factors that lead to failure of the contract similar to research on contract failures in the EU [1].

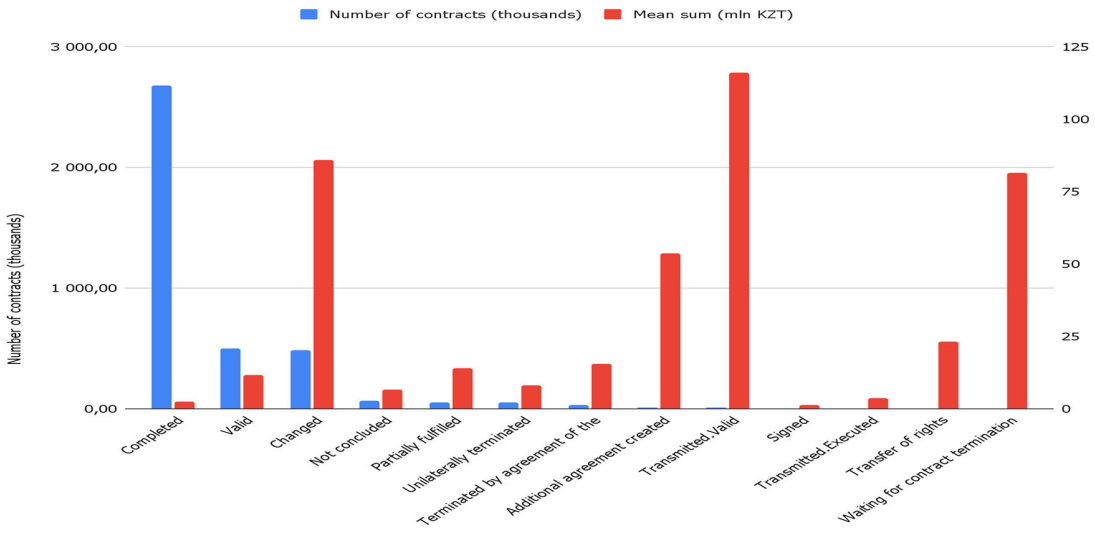


Figure 1 – Contracts by statuses and mean sums
Note – compiled by author based on data from goszakup.gov.kz

In the perspective of trend analysis we can divide the dataset by year and add sum of contract sums by current status so we can see the volume change as well.

Here in figure 2 we summarized contracts by current statuses and in order to analyze finalized contracts we chose contracts created between 1st of march of 2021 till 1st march of 2023 and divided them into two separate groups to compare the dynamics through the time. The data was collected in October of 2023 and the latest contracts were created 6 months prior. In order to be confident that the data is not affected by the time difference as latest contracts may still be in the middle of process and status check can be read incorrectly we compare with previous year and see that the number of contracts is higher in 2022 by 3.7% while the number of executed contracts is lower by 6.6% so we must take a note that about 10% of contracts are still in progress so the dynamics should be evaluated carefully. We grouped the statuses to exclude technical statuses that have very few contracts that were already shown in figure 1. Also, there is a growing number of failed contracts in absolute numbers.

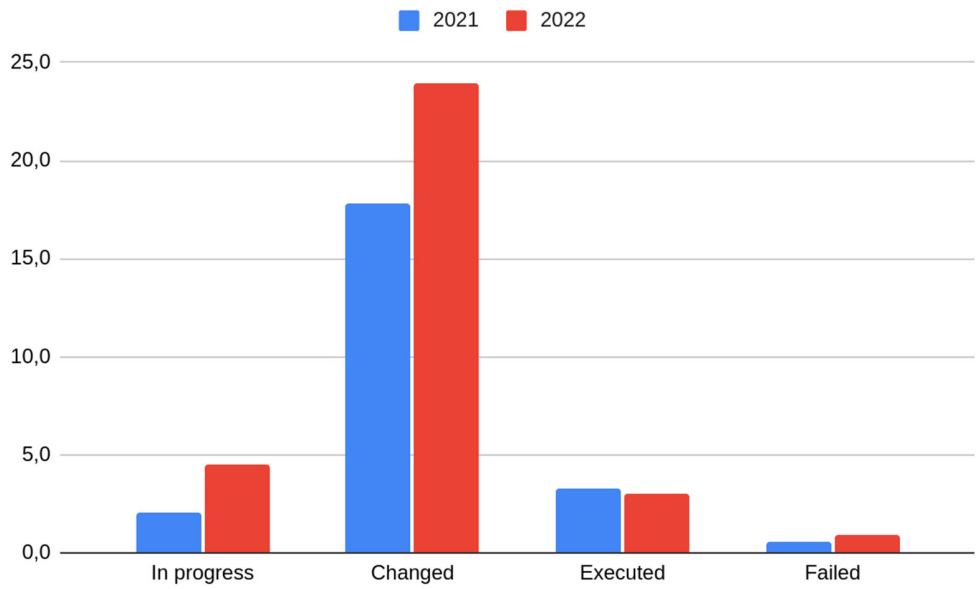


Figure 2 – Number of contracts (millions) by statuses for each year.
Note – compiled by author based on data from goszakup.gov.kz

The summary of contracts by methods (Figure 3):

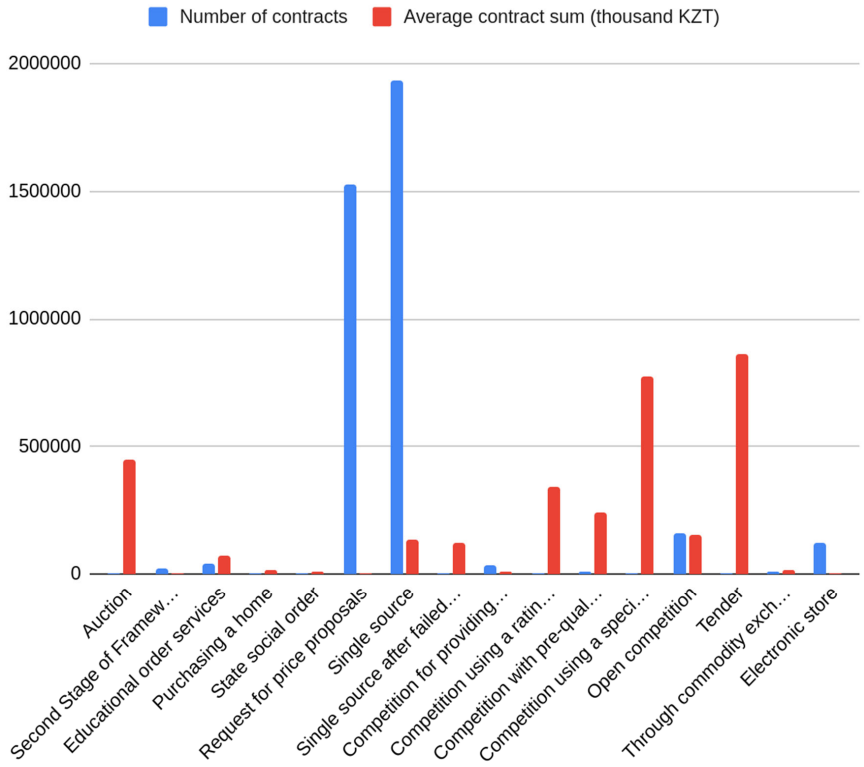


Figure 3 – Contracts distribution by method of procurement.
Note – compiled by author based on data from goszakup.gov.kz

Generally, the contracts are held in various methods of procurement, which we can see in figure 3. Interestingly the contract methods that were exercised the most have lower average contract sum which is expected, more expensive contracts are also more complex and are held in smaller numbers, while typical procurements are held en masse. In figure 3 we can see some technical methods that are not explained in the Law and might be considered as temporary methods that were used during certain versions of the Law on public procurements. The general policy is directed towards the increase of competitive contracts, lowering the number of non-competitive methods i.e from single source [8], so we can dive inside to see whether it is really held in practice.

For better view we excluded contracts with status "changed" and grouped them by method names so we got following figures 4 and 5:

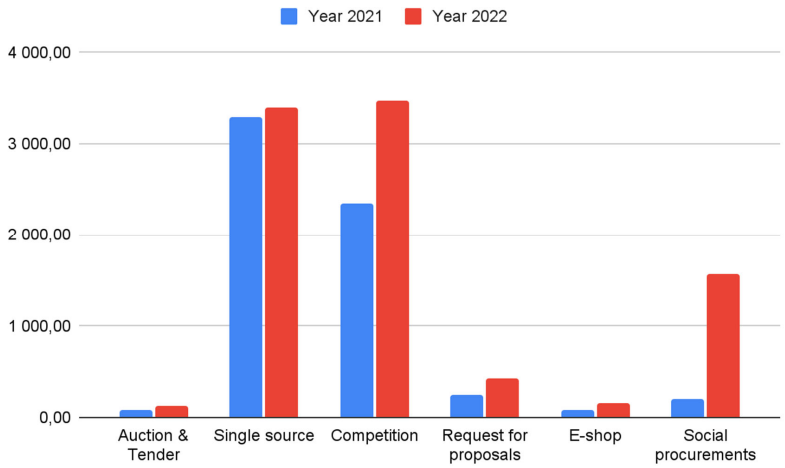


Figure 4 – Total sum of contracts grouped by methods of procurement (billion KZT).

Note – compiled by author based on data from goszakup.gov.kz

In figure 4 we can see the dynamics of policy in public procurement. Although the government periodically states that they need to decrease the number of non-competitive procurements, the total allocated budget is growing, but the growth is weaker than in other methods like competition, request for proposals and most significantly social spendings. So overall we can assume that the growth of budget on single source contracts is within the margin of inflation if not less. Regarding the numbers, requests for proposals grew from 32% of procurement contracts up to 49% while single source contracts fell from 63% down to 38%, but this is in sheer number of contracts, while the allocated budget for single source contracts grew a little.

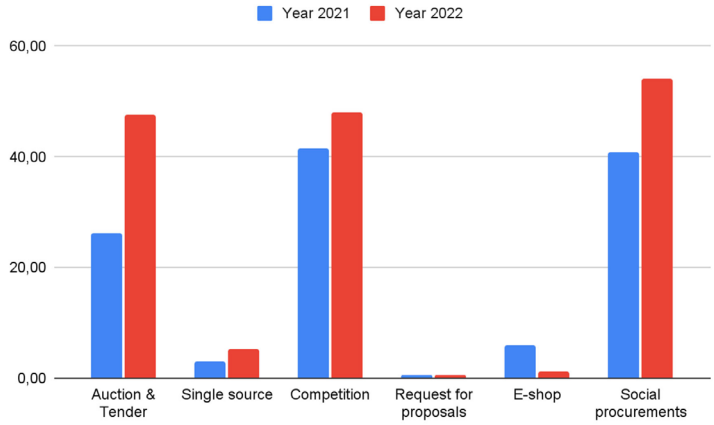


Figure 5 – Average sum of contracts grouped by methods of procurement (million KZT).

Note – compiled by author based on data from goszakup.gov.kz

Contract methods correlate with average contract sum as it is prescribed in the law to use certain methods for contracts up to certain sum, for example request for price proposal should be used to procurement up to 8 000 monthly calculation indicator [7] which is 3 450 KZT as of 2023. The average contract sum of request for proposals method is 460 thousand KZT which is well within the limits for such a method of procurement. Methods with the highest average contract sum are tender and competition using a special regime, the latter is the method that is used in emergency situations like a failed coup in January of 2022, so those contracts are likely to be created as a response to that situation. The tender and auction methods of procurement grew twice in a year. One of the methods that are used to improve and automate the procurement procedure is the electronic store method, where the customer chooses the product from the online store that simplifies the purchase process [7]. In figure 4 and 5 we can see that electronic shop and commodity exchange methods were blurred with a fall of average sum and growth in sheer number of procurements. This method is limited by a sum of up to 4 000 MCI and the data shows an average of 592 thousand KZT of 120 thousand contracts.

In figure 6 we can see how the contracts are distributed among regions. There is no visible distinction between big cities or more populated regions as 71 is Astana, 75 is Almaty and 79 is Shymkent. Overall, we assume that this distribution of regions is satisfactory to run a regression model and use it as a dependent variable.

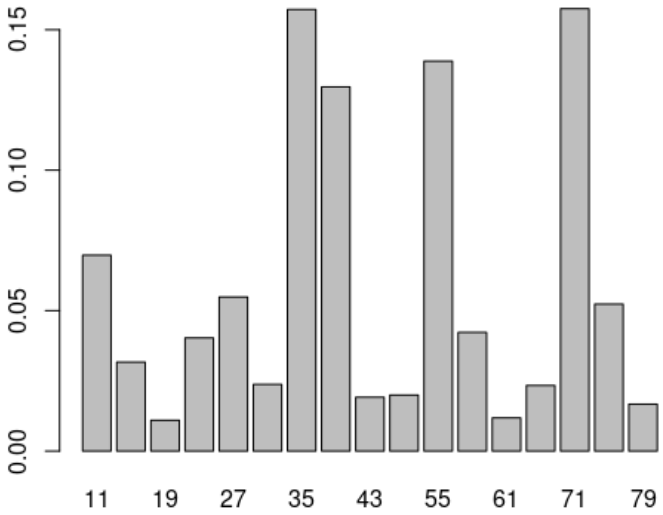


Figure 6 – Frequency distribution of contracts by region of customer

Note – compiled by author based on data from goszakup.gov.kz

*2. Distinctive Features of Kazakhstan's Public Procurement System*

We group the statuses according to law when it is unclear to which group to put so we get following summary table 1:

Table 1 – Grouped contract statuses

| Group | Contracts (in thousands) | Share |
|---|---|---|
| Successful | 2 682,97 | 68,96% |
| In progress | 1 055,16 | 27,12% |
| Failed | 152,59 | 3,92% |
| ***Total*** | **3 890,72** | 100% |

Note – compiled by author based on data from goszakup.gov.kz

A notable feature of Kazakhstan's procurement system is the relatively low failure rate of contracts. Only 3.92% of contracts failed, which is significantly lower than rates observed in some other countries, such as Denmark's 24.6% cancellation rate [1]. In our case we analyze only the contracts, which omits the overall procurement process from announcement and collection of bids, when about half get canceled due to various reasons that we show in a separate query on lots. Although there are 27.12% of contracts with status still in progress so some part of them can be canceled as well, for that we would need to retrieve older data where the share of contracts in progress will fall. For now, as we have collected contracts data for only 2 years we are limited in ability to analyze deeper, but we can retrieve statuses for contracts exclusively 1st year and get following results (Table 2):

Table 2 – Grouped contract statuses of 1st year

| Group | Contracts (thousands) | Share |
|---|---|---|
| *Successful* | 1 390,74 | 72,64% |
| *In progress* | 446,02 | 23,30% |
| *Failed* | 77,83 | 4,06% |
| ***Total*** | **1 914,58** | **100%** |

Note - compiled by author based on data from goszakup.gov.kz

Here in table 2 we can see that the share of contracts that are in progress are distributed between failed and successful status according to their general ratio. So even this way it is not likely that the share of failed contracts will grow to 24% like in Denmark. It can be due to differences in procurement procedures and law, also we are summarizing only those procurements that passed the first stage of announcement and gathering of applications to participate in procurement, which significantly decreases the actual fail rate. In other words, we can be confident that our first results are similar to those of international research on procurement data.

One of the points of improvement in public procurement was the group of methods from a single source that was addressed by the president [8]. There are several methods that include the phrase single source or one source, if we group them we can consider those procurements as non-competitive procurements and analyze and compare the contracts from this perspective. So, we get the following numbers: after grouping we get 1.9 million contracts or 49,76% of all contracts in number and 19 trillion KZT in volume or 33,44% of total spending in public procurement recorded on goszakup.gov.kz portal.

To see the trend in competitive method implementation we should query the database on methods per year and on numbers and volume as well.

According to table 3 it is clear that the trend of decreasing the number of contracts from a single source is evident. It falls twice for successful contracts and more than three times for failed contracts. This drastic difference in shares of successful and failed contracts can be interpreted as contracts from a single source are less likely to be canceled as there should be prior agreement between customer and supplier before the conclusion of a contract. Overall, we can be confident in the validity of the data as it proves basic theory and our expectations. Further we can analyze the data identifying key variables and run regression to find deeper relationships to find how the public procurement influences local production and how we can trace consequences of such contracts to the procedures and effectiveness.

The decrease in single-source procurement methods aligns with recent government initiatives to enhance competition and transparency [8]. This trend indicates a positive shift towards more competitive bidding practices, which could lead to improved efficiency and value for money in public spending.

Table 3 – Grouped value of contracts and their volumes that were held by the methods that include "from one source" in its title

| Contracts from single source | 2021 | | 2022 | |
|---|---|---|---|---|
| | Number of contracts | Total sum (billions KZT) | Number of contracts | Total sum (billions KZT) |
| successful contracts | 877 277,00 | 1 853,41 | 448 561,00 | 1 197,01 |
| *percentage* | *63%* | *56%* | *35%* | *39%* |
| failed contracts | 30271 | 199,83 | 6759 | 76,74 |
| *percentage* | *39%* | *37%* | *11%* | 11% |

Note - compiled by author based on data from goszakup.gov.kz

3. *Factors Contributing to Contract Failure*

The regression model,

$$F = \beta_1 + \beta_2 LP + \beta_3 SS + \beta_4 log(CS) + \beta_5 B + \beta_6 R \quad (1)$$

Where, F – a dummy variable that indicates whether the contract failed;
LP – share of local production between 0 and 100;
SS – dummy variable that indicates whether it was a single source contract;
CS – contract sum;
B – vector of budget sources;
R – vector of regions.

Our analysis of factors contributing to contract failure in Kazakhstan's public procurement system based on the Generalized Linear Model (GLM) presented in table 4. This model explains approximately 15.4% of the deviance in contract failures (McFadden's pseudo-$R^2$ = 0.154).

Regression outcome:

Table 4 – Regression outcome based on model 1

| Coefficients | Estimate | Std. Error | Pr(>\|z\|) |
|---|---|---|---|
| (Intercept) | -6,82 | *0,196* | *** |
| Share of local production | -0,04 | *0,002* | *** |
| Log of Contract sum | 0,31 | *0,012* | *** |
| Is single source | -1,04 | *0,067* | *** |
| Fin Source Budget | -0,35 | *0,056* | *** |
| Fin Source External Cofinance | -10,29 | *179,402* | |
| Fin Source Gov Sales | -0,34 | *0,427* | |
| Fin Source Sponsorship | 0,17 | *0,625* | |
| Fin Source Loans | -2,05 | *1,010* | * |
| Fin Source Transferts to local budget | -11,47 | *492,141* | |
| region Aktobe | -0,49 | *0,285* | . |
| region Almaty | -0,94 | *0,466* | * |
| region Atyrau | 0,47 | *0,172* | ** |
| region West Kazakhstan | 0,11 | *0,173* | |
| region Zhambyl | 0,76 | *0,207* | *** |
| region Karagandy | 0,64 | *0,125* | *** |

| | | | |
|---|---|---|---|
| region Kostanay | 0,30 | *0,132* | * |
| region Kyzylorda | 0,09 | *0,260* | |
| region Mangystau | -0,52 | *0,313* | . |
| region Pavlodar | 0,19 | *0,134* | |
| region North Kazakhstan | 0,25 | *0,180* | |
| region Turkistan | -0,26 | *0,400* | |
| region East Kazakhstan | 0,80 | *0,191* | *** |
| region Astana | 0,57 | *0,124* | *** |
| region Almaty City | 0,23 | *0,160* | |
| region Shymkent | 0,50 | *0,236* | * |
| Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 | | | |

Note - compiled by author on R package

1. Local Production Share: We have a significant negative relationship between local production share and contract failure. For each percentage point increase in local production content, the probability of contract failure decreases. This suggests that contracts with higher local production involvement tend to be more successful, potentially due to reduced logistical issues or better alignment with local needs and capabilities.

2. Log of Contract sum: The model shows a significant positive relationship between the logarithm of contract sum and failure rate. Larger contracts, in terms of monetary value, appear to have a higher probability of failure. This could be attributed to the increased complexity and risk associated with higher-value procurements corresponding to the findings in literature [1].

3. Competitiveness: Interestingly, single-source contracts show a lower probability of failure compared to competitive contracts. This might be because single-bidder contracts are simpler to manage. It could also be that the government works better with companies it already knows well. As it was mentioned by Fazekas [16] single source bids indicate better connection between procurer and supplier.

4. Financial Sources: While most financial sources did not show statistically significant effects, certain sources (particularly Budget and Loans) were associated with lower failure rates. This suggests that the source of funding can play a role in contract outcomes, possibly due to varying levels of oversight or differing procurement practices associated with different funding streams.

5. Regional Effects: Different regions have different rates of contract failure. Zhambyl, Karaganda, East Kazakhstan, and Astana have more failures than average. Almaty has fewer failures. This might be because of differences in local economies, how well local offices work, or how each region handles contracts.

These findings provide a foundation for understanding the dynamics of contract failures in Kazakhstan's public procurement system. However, further research is needed to identify additional contributing factors and to explore potential non-linear relationships or interactions between variables that could enhance our understanding of procurement outcomes.

Our findings confirm key trends in Kazakhstan's procurement system and align with the research questions. The shift towards competitive procurement is evident as requests for proposals grew from 32% to 49%, while single-source contracts dropped from 63% to 38%. Despite policy efforts, regional disparities in contract failures remain, with higher failure rates in Astana, East Kazakhstan, and Zhambyl, while Almaty shows lower-than-average failure.

Regression results confirm that local production share is negatively correlated with contract failure (-0.04, $p < 0.001$), supporting our hypothesis that local suppliers face fewer risks related to logistics and compliance. Contrary to expectations, single-source contracts fail less frequently, possibly due to pre-negotiated terms and supplier familiarity. Larger contracts tend to fail more often, which is consistent with findings in other procurement studies.

These results suggest that while competitive procurement is increasing, government support for local suppliers remains crucial. The regional differences in failure rates highlight the need for targeted improvements in local procurement administration. Future research should explore long-term trends, reasons behind stable single-source contracts, and specific regional challenges affecting procurement efficiency.

**Discussion and limitations**

Our model offers valuable insights, but the low pseudo-$R^2$ value suggests that other factors affecting contract failures are not included in our analysis. The right-skewed distribution of deviance residuals indicates that our model may underpredict failures, especially for high-risk contracts.

We found several factors influencing contract failure, such as local production share, contract sum, and procurement method. The negative relationship between local production share and failure supports the government's focus on domestic suppliers. Unexpectedly, single-source contracts show a lower failure probability, which may be due to established supplier relationships or simpler processes.

Regional differences in failure rates suggest a need for targeted interventions. Understanding these variations could help create more effective local procurement policies.

Our study has several limitations:

The two-year timeframe restricts our ability to identify long-term trends.

The low pseudo-$R^2$ value indicates that some important factors are not captured in our model.

Our analysis focuses on contract-level data and may miss important aspects of the early procurement stages.

While we make international comparisons, differences in regulations and economic contexts may limit direct comparability.

Despite these limitations, this study contributes to the literature on public procurement in emerging economies and provides a basis for further research and policy development in Kazakhstan.

## CONCLUSION

Our analysis of nearly 3.9 million contracts provides insights into Kazakhstan's public procurement market. Key findings include:

– A high proportion of "changed" status contracts, likely due to software structure requiring new entries for modifications.

– Significant number of unexecuted contracts from the initial period, possibly indicating complex projects or other factors requiring further investigation.

– Approximately 4% of contracts fail, though this may change as ongoing contracts conclude.

– Requests for proposals grew from 32% of procurement contracts up to 49% while single source contracts fell from 63% down to 38%, but this is in sheer number of contracts, while the allocated budget for single source contracts grew a little.

– Single-source procurement growth is minimal, aligning with government efforts to enhance competition and transparency.

Regression analysis revealed factors influencing contract failure, including local production share, contract sum, and procurement method. The negative correlation between local production share and failure supports the promotion of domestic suppliers, thereby supporting our hypothesis. Interestingly, single-source contracts showed lower failure rates, warranting further study.

Regional variations in failure rates highlight the need for targeted interventions. This study contributes to the literature on public procurement in emerging economies and suggests areas for improvement:

1. Maintain competitive bidding while investigating single-source contract success factors.
2. Provide targeted support for regions with higher failure rates.
3. Examine factors contributing to higher failure rates in larger contracts.

While Kazakhstan's procurement system shows promise, there's room for optimization. Ongoing data-driven analysis and policy refinement will be crucial for enhancing efficiency, fairness, and effectiveness in public procurement.

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## ҚАЗАҚСТАНДАҒЫ МЕМЛЕКЕТТІК САТЫП АЛУЛАР ЖАҒДАЙЫ: ЕКІ ЖЫЛДАҒЫ ТЕРЕҢ ШОЛУ

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### АҢДАТПА

*Зерттеу мақсаты.* Қазақстандағы мемлекеттік сатып алу нарығын талдау, негізгі тенденцияларды, келісімшарттардың орындалмауына әсер ететін факторларды және сатып алу тәжірибесіндегі аймақтық айырмашылықтарды анықтау болып табылады.

*Әдіснамасы*. Біз нарық сипаттамаларын қарастыру үшін сипаттамалық статистиканы және келісімшарттың сәтсіздігіне әсер ететін факторларды анықтау үшін жалпылама сызықтық модельді регрессия талдауын қолданып, шамамен 3,9 миллион сатып алу келісімшартын зерттедік. Зерттеу жергілікті өндіріс үлесі, келісімшарт сомасы, сатып алу әдісі және аймақ сияқты айнымалыларға назар аударды.

*Зерттеудің бірегейлігі/ құндылығы*. Бұл зерттеу Қазақстандағы сатып алу ландшафтының жан-жақты талдауын ұсына отырып, дамушы елдердегі мемлекеттік сатып алулар бойынша шектеулі әдебиетке ықпал етеді. Ол саясаткерлер мен тәжірибешілер үшін құнды ақпарат береді, елдің сатып алу жүйесін әлеуетті жақсарту бағыттарын көрсетеді.

*Зерттеу нәтижелері*. Зерттеу бірнеше негізгі қорытындыларды анықтады: (1) «өзгертілді» деп белгіленген келісім-шарттардың жоғары үлесі, мүмкін нақты өзгертулерден гөрі бағдарламалық құрал құрылымына байланысты; (2) 4% келісім-шарттың орындалмауы, үлкенірек келісім-шарттарда сәтсіздік жиі кездеседі; (3) бәсекелес сауда-саттыққа ауысуды көрсететін сатып алудың басым әдісі ретінде пайда болатын ұсыныстарға сұраныстар (келісімшарттардың 52%); (4) бір көзден алу тәсілімен сатып алудың ең аз өсімі, үкіметтің ашықтығын қамтамасыз ету жөніндегі күш-жігерге сәйкес; (5) отандық өнім берушілер келісім-шарттың тұрақтылығына ықпал етеді деген гипотезаны қолдайтын

жергілікті өндіріс үлесі мен келісімшарттың орындалмауы арасындағы теріс корреляция; (6) бір көзден алынатын келісім-шарттардағы сәтсіздіктердің күтпеген төмендеуі, жеткізушілермен танысу және алдын ала келіссөздер тәуекелдерді азайтуды ұсынады; және (7) жергілікті әкімшілік және нарықтық әсерлерді көрсететін келісім-шарттардың орындалмауындағы елеулі аймақтық диспропорциялар. Бұл тұжырымдар бір көзден алынатын келісім-шарттардың сәтті болуына ықпал ететін факторларды зерделеу және бәсекеге қабілетті сауда-саттықты одан әрі зерттеу қажеттілігін көрсетеді.

*Түйін сөздер:* мемлекеттік сатып алу, жергілікті өндіріс, нарықтың шоғырлануы

# СИТУАЦИЯ В СФЕРЕ ГОСУДАРСТВЕННЫХ ЗАКУПОК КАЗАХСТАНА: УГЛУБЛЕННЫЙ ОБЗОР ЗА ДВА ГОДА

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## АННОТАЦИЯ

*Целью исследования* является анализ рынка государственных закупок в Казахстане, выявление основных тенденций, факторов, влияющих на невыполнение контрактов, и региональных различий в практике закупок.

*Методология*. Мы изучили около 3,9 млн контрактов на закупки, используя описательную статистику для обзора характеристик рынка и используя регрессионный анализ обобщенной линейной модели для выявления факторов, влияющих на провал контрактов. Исследование было сосредоточено на таких переменных, как доля местного производства, сумма контракта, метод закупок и регион.

*Оригинальность.* Это исследование вносит вклад в ограниченную литературу по государственным закупкам в развивающихся экономиках, предлагая всесторонний анализ ландшафта закупок в Казахстане. Оно дает ценную информацию для политиков и практиков, выделяя области для потенциального улучшения в системе закупок страны.

*Результаты*. Исследование выявило несколько ключевых выводов: (1) высокая доля контрактов, помеченных как «измененные», вероятно, из-за структуры программного обеспечения, а не из-за фактических модификаций; (2) процент неудачных контрактов составляет 4%, причем неудачи чаще встречаются в более крупных контрактах; (3) запросы предложений стали доминирующим методом закупок (52% контрактов), что отражает переход к конкурентным торгам; (4) минимальный рост закупок из одного источника, что соответствует усилиям правительства по обеспечению прозрачности; (5) отрицательная корреляция между долей местного производства и невыполнением контрактов, что подтверждает гипотезу о том, что отечественные поставщики способствуют стабильности контрактов; (6) неожиданно более низкий уровень отказов в контрактах с одним поставщиком, что позволяет предположить, что осведомленность поставщика и предварительные переговоры снижают риски; и (7) значительные региональные различия в количестве неудачных контрактов, что указывает на местное административное и рыночное влияние. Эти выводы указывают на необходимость дальнейшего исследования конкурентных торгов и изучения факторов, способствующих успеху контрактов из одного источника.

*Ключевые слова*: государственные закупки, местное производство, концентрация рынка

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