Innovations

Determinants of Private Company Tender Win Rates in Public Sector Tenders in Latvia

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Abstract:
Background: *Public procurement in Latvia is a crucial component of the national economy, with the private sector actively participating in tenders to secure government contracts. Understanding the factors that determine the success of companies in winning public sector tenders is essential for improving competition, fairness, and transparency.* ***Objective:*** *This study aims to identify the determinants that influence private companies' win rates in public sector tenders in Latvia, focusing on company size, tender value, industry group, and tender characteristics.* ***Methods:*** *Using a dataset of private companies' participation in public sector tenders from 2020 to 2023, we conducted statistical analysis, incl. multiple regression, to explore how these factors impact win rates.* ***Results:*** *Findings suggest that company size and industry group significantly influence tender success rates: larger companies are expected to win more often, especially construction and technology industries.* ***Conclusions:*** *Access to resources is key to enable companies to win more tenders, which could guide policy makers towards supporting resource-lacking companies, such as SMEs.*

Keywords: *Public procurement, Latvia, Tendering, Competitiveness, SMEs*

1. Introduction

1.1 Background information

Public procurement forms a significant part of Latvia's economic landscape, appx. 14% of GDP, with tenders offering opportunities for private companies to secure government contracts. Similar to broader trends in the European Union, Latvia's public procurement system is shaped by regulations aimed at increasing transparency, competition, and inclusiveness. However, understanding the

determinants that drive tender wins is key to addressing disparities in competition, particularly for SMEs.

Previous research in the field of public procurement has largely focused on procurement outcomes, such as price levels and competition. However, less attention has been paid to supply-side factors and understanding what contributes to a company's competitiveness in tenders. Reports from the European Union, e.g. OECD and the European Court of Auditors, highlight existing challenges, especially for small and medium-sized enterprises (SMEs), which face difficulties in competing due to high administrative costs and complex tender requirements.

1.2 Problem statement

Despite existing reforms aimed at promoting competition, challenges remain in ensuring fair participation and success rates across private companies. The public procurement environment in Latvia still presents barriers for smaller firms, with public sentiment being that incumbents are well positioned to win tenders as opposed to smaller firms, newcomers or foreign companies. Large heterogeneity, in terms of bidding company sizes, resources and particular tender industry characteristics are all likely determining win rates. Likewise, legal and procedural requirements may favor larger companies (that know how to navigate these hurdles) or those in specific industries, reducing opportunities for SMEs.

This study builds on existing knowledge of public procurement, specifically in the EU, by focusing on factors affecting company ability to win tenders in Latvia.

1.3 Research objectives

This study aims to explore the key determinants influencing private company success rates in public sector tenders in Latvia. Specifically, we seek to identify the factors that affect the win rates of private enterprises, with a particular focus on SMEs, in the context of public procurement. Our research will investigate how variables such as company size, financial capacity, and industry type, as well as tender-specific elements like value, category, and evaluation criteria, contribute to varying success levels in winning public contracts.

By examining the dynamics of tender competition, this study also aims to provide actionable insights into how transparency, procurement policies, and administrative practices could be improved. In doing so, we hope to contribute to the growing body of literature exploring public procurement outcomes and offering specific recommendations for policymakers (in Latvia and EU) to enhance tendering access and competitiveness. Ultimately, our goal is to better understand the structural and procedural factors that influence tender outcomes, helping to inform future public procurement reforms aimed at promoting fairness and efficiency.

2. Literature Review

2.1 Theoretical framework

Public procurement is a cornerstone of economic activity within the European Union, including Latvia. As governments allocate large portions of national budgets to public contracts, the mechanisms through which tenders are awarded influence market efficiency, innovation, and resource allocation. To understand this topic, theories - auction theory, market structure theory, and the theory of transaction costs - offer frameworks on how competition in tendering processes unfolds in market conditions.

Auction theory suggests: well-structured tender processes lead to better market outcomes by encouraging competitive bidding. This is closely tied to market structure theory, which posits that a greater number of competitors in bidding processes increase market efficiency, lowering costs for public authorities (OECD, 2011). Furthermore, transaction cost theory explains how complex procurement procedures can raise the costs for potential bidders, deterring participation - particularly for smaller, resource-lacking companies.

Empirical studies confirm these theories in practice - the 2021 report by the European Commission on measuring the impact of procurement reforms shows how streamlined procurement processes can foster greater participation and competition, leading to better value for taxpayers. Similarly, research by Fu et al. (2021) highlights that the effectiveness of public procurement largely depends on how well tender processes are designed.

2.2 Previous research

Extensive research has focused on public procurement and its impact on competition, transparency, and market dynamics. The OECD report on competition and procurement (2011) identifies how procurement policies across EU countries have evolved to mitigate anti-competitive behavior, but also notes persistent challenges such as limited participation by smaller firms and high administrative burdens.

Kuljanin and Klipstein's (2017) research on the Common Procurement Vocabulary (CPV) highlights the role of standardization in public procurement. CPV codes aim to ensure transparency and consistency across EU tenders, but their study reveals that misclassifications can create barriers to entry, particularly for small and medium-sized enterprises (SMEs). Misclassified tenders can result in missed opportunities for bidders, reducing competition and skewing market outcomes.

The cosinex final report (2017) on the revision of the CPV system supports this argument, noting that a rigid CPV structure can hinder innovation and adaptability in procurement. As procurement and tendering become increasingly digital, improving the flexibility of used CPV codes is essential to drive tender participation.

Transparency and open data initiatives are increasingly recognized as key mechanisms for improving public procurement processes, fostering competition, and enhancing accountability. Patrucco and Dimand (2021) analyzed transparency projects across EU Member States, highlighting how open data platforms have allowed stakeholders, including SMEs, to access procurement information more efficiently. Their study found such initiatives reduced information asymmetry, making procurement opportunities more visible to a broader audience, which is particularly beneficial for smaller firms that often struggle to navigate complex tendering processes. Furthermore, they emphasize the importance of standardizing procurement data formats, such as CSV and XML, to facilitate large-scale analysis and improve decision-making. This growing emphasis on transparency aligns with broader trends in public sector reforms aimed at increasing competition and ensuring fair access to tenders for all market participants, regardless of size (Patrucco&Dimand, 2021).

The 2021 European Commission report on SMEs further demonstrates the impact of administrative burdens and complex procurement documentation on SMEs' ability to participate in public procurement. Smaller firms often lack the resources to navigate cumbersome tendering processes, and consequently are disproportionately affected by these barriers. The report suggests that simplifying documentation and reducing procedural hurdles are critical to leveling the playing field between large corporations and smaller enterprises.

In addition, Celotti et al. (2021) examined how SMEs face unique challenges when competing for public contracts, particularly in terms of bid preparation costs. These factors lead to fewer SMEs participating in tenders, despite their potential to provide competitive offers, which may be in the buyer’s best interest.

Lastly, the Prometeia report (2021**)** highlights the challenges associated with cross-border public procurement within the EU. While larger companies often have the resources to engage in tenders across borders, smaller firms face barriers, including language issues, legal complexities, and administrative burdens. The study calls for reforms to reduce these barriers and promote greater cross-border competition, particularly for smaller contracts, which remain overwhelmingly awarded to domestic firms or subsidiaries of larger foreign companies.

2.3 Literature gap

Despite extensive research on public procurement, the specific factors influencing private company win rates in public tenders remain underexplored, particularly in the Latvian context. Current literature emphasizes the challenges that SMEs face due to procurement complexity and administrative costs, but often lacks empirical data on how these challenges affect win rates empirically.

The role of industry-specific factors in determining tender success is another under-researched area. As the **2021 European Commission report** on procurement highlights, different industries face unique challenges in tender competition. For example, high-value contracts in construction or technology areas are often dominated by large incumbent firms, while smaller industries may struggle to meet the stringent requirements of public contracts.

Our research seeks to fill these gaps by leveraging a comprehensive dataset on Latvian tenders (2020 to 2023), focusing specifically on private company win rates. We aim to provide a deeper understanding of how different organizational and industry elements influence success in public procurement. This work contributes to the ongoing discussion on simplifying tender processes and increasing participation by SMEs.

3. Methodology

3.1 Description of the dataset

This study is based on a dataset of 14,692 organizations that participated in public tenders in Latvia between 2020 and 2023. The dataset includes comprehensive information on these organizations' tender participation, financial performance, and industry affiliations, collected from public sources such as the open data portal of the Republic of Latvia and the national electronic procurement system.

The dataset underwent rigorous data cleaning and preparation processes using Sorsera's data processing tools (app.sorsera.com). These processes included standardizing company registration numbers, resolving inconsistencies in organization names, and imputing missing values for key financial indicators such as turnover, profit, and employee count. Missing data were handled through appropriate imputation techniques, such as using median values for financial variables, to ensure the robustness of the analysis.

Each organization in the dataset is classified into one of twelve industry groups, based on their primary sector of activity. These industry classifications are derived from the Common Procurement Vocabulary (CPV) system, which was further refined by using advanced machine learning tools to categorize CPV codes into 52 industries and then group them into broader categories. This industry grouping allowed for a more meaningful analysis of the industry-specific effects on tender win rates.

The dataset includes both financial variables and tender participation metrics, such as the number of tenders a company participated in and its win ratio. The win ratio is the key outcome variable in this study, measuring the proportion of tenders that a company successfully won out of those it participated in. The financial variables include average turnover, profit, and employee count over the years 2021 to 2023.

On average, companies had a turnover of approximately €3.4 million and employed 25 people.

3.2 Statistical methods

To investigate the factors influencing private companies' success in public tenders, a multiple linear regression model was developed. The dependent variable for the analysis is the win ratio, defined as the percentage of tenders a company won relative to the tenders it participated in.

The independent variables in the model are as follows:

- **tenders_bid**: This variable represents the total number of tenders each organization participated in.
- **Top_industry_group**: A categorical variable that classifies organizations into one of twelve industry groups, based on their primary sector of activity.
- **average_turnover**: The mean turnover of each organization over the years 2021, 2022, and 2023. Turnover is used as a proxy for the financial strength of the organization, which may influence its ability to win tenders, especially for large contracts requiring substantial resources
- **average_profit**: The mean annual profit over the same period. Profitability is included to capture the overall financial health of the organization, as more profitable companies may be better equipped to fulfill tender requirements and secure contracts.
- **average_employees**: This variable captures the average number of employees over the years 2021 to 2023, serving as a proxy for the size and operational capacity of the organization. Larger companies may have more resources to allocate toward preparing competitive bids and meeting the requirements of complex tenders.

Before conducting the regression analysis, each numeric variable was standardized to ensure comparability and address potential issues with scale. Additionally, categorical variables were converted into factors to account for industry-specific effects. The variance inflation factor (VIF) was calculated to check for multicollinearity among the independent variables, ensuring that no significant correlation existed between them.

The multiple regression model was executed using R statistical software, allowing us to examine the impact of the independent variables on the win ratio while controlling for industry and company size effects. The results from this model provide insight into the factors that contribute to a company's success in public sector tenders in Latvia.

4. Results & Discussion

4.1. Presentation of regression analysis results

To explore the relationships among the key variables in the dataset, we began by constructing a correlation matrix. This analysis helps us assess potential collinearity among independent variables before performing the regression analysis. The correlation matrix for our key continuous variables is presented below.

Table 1: Correlation Matrix

	tenders_bid	average_turnover	average_profit	average_employees	winRatio
tenders_bid	1	0.167	0.0742	0.139	0.0667
average_turnover	0.167	1	0.497	0.620	0.0282
average_profit	0.0742	0.4974	1	0.318	0.0235
average_employees	0.139	0.620	0.318	1	0.0411
winRatio	0.0667	0.0282	0.0235	0.041	1

We found generally low correlations between variables, suggesting that multicollinearity is not a major concern in our analysis. Despite the low correlations between key financial variables - turnover and profit, these were retained in the model as they may still contribute to tender success in ways not captured by simple correlations. Additionally, multicollinearity was checked using the Variance Inflation Factor (VIF) with no significant issues identified. Financial metrics were standardized to ensure comparability, and alternative approaches to address collinearity, e.g. principal component analysis (PCA), could be explored in future research.

Next, we conducted a multiple linear regression analysis to examine the relationship between the win ratio and a set of independent variables, such as tender participation, turnover, profit, employee count, and industry group. The regression output is summarized below:

Table 2A: Regression Results

Variable	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	0.0790	0.2294	0.3443	0.7306
log_Tender_value	-0.0096	0.0013	-7.3773	<0.001 ***
Buyer_size	0.0058	0.0012	5.0026	<0.001 ***
Industry_size	0.8491	0.0702	12.0986	<0.001 ***
LawGeneral	-0.2635	0.1094	-2.4085	<0.05 *
LawSecurity	-0.4708	0.1369	-3.4398	<0.001 ***
LawUtility	0.0488	0.1086	0.4490	0.6535
ProcedureNegotiated procedure	-0.3077	0.0506	-6.0757	<0.001 ***
ProcedureOpen tender	0.0365	0.0461	0.7909	0.4290
ProcedureOther	-0.4908	0.0494	-9.9265	<0.001 ***
ProcedureSmall purchase	-0.2075	0.0463	-4.4804	<0.001 ***
ProcedureStandardized	-0.1016	0.0483	-2.1057	<0.05 *
Award_criteriaLowest price	-0.2938	0.1276	-2.3024	<0.05 *
Award_criteriaMost economic	-0.3736	0.1277	-2.9262	<0.01 **

Industry_groupBusiness Services	0.1238	0.0222	5.5705	<0.001 ***
Industry_groupConstruction& Engineering	0.1294	0.0157	8.2540	<0.001 ***
Industry_groupDigital& Software Services	0.0170	0.0208	0.8161	0.4145
Industry_groupEducation, Research, & Training	0.0513	0.0225	2.2794	<0.05 *
Industry_groupEnergy& Utilities	0.0585	0.0220	2.6546	<0.01 **
Industry_groupHealthcare& Life Sciences	-0.0226	0.0099	-2.2953	<0.05 *
Industry_groupManufacturing& Industrial	0.0817	0.0307	2.6638	<0.01 **
Industry_groupOther	0.1708	0.0158	10.7836	<0.001 ***
Industry_groupReal Estate & Construction Materials	0.0846	0.0225	3.7510	<0.001 ***
Industry_groupRetail& Wholesale Trade	0.1227	0.0322	3.8103	<0.001 ***
Industry_groupTransportation& Logistics	-0.0533	0.0191	-2.7873	<0.01 **
Tender_categoryBūvdarbi	0.7104	0.1395	5.0928	<0.001 ***
Tender_categoryPakalpojums	0.6534	0.1388	4.7062	<0.001 ***
Tender_categoryPiegāde	0.6960	0.1388	5.0129	<0.001 ***

Table 2B: Model summary

Residual standard error	Multiple R-squared	Adjusted R-squared	F-statistic	p-value
0.584 on 47004 degrees of freedom	0.077894482	0.077364806	147.1 on 47004 and NA DF	< 2.2e-16

4.2. Discussion of Findings

Our findings shed light on several critical factors affecting the win ratio of private companies in public tenders. Notably:

- **Tender Participation (tenders_bid):** The negative relationship between the number of tenders a company bids on and its win ratio suggests that companies spreading their resources across many tenders may be less competitive in each individual tender. This could be due to insufficient resources allocated to proposal development or less focus on specific tenders. Alternatively, companies may be adopting different strategies, e.g. bidding many tenders in the hopes of winning a few.
- **Financial Performance:** Companies with higher turnover and profit tend to have better win rates, likely because they have more resources to dedicate to fulfilling tender requirements and can offer more competitive bids. This finding aligns with previous research suggesting that financial strength is a key determinant of success in public procurement (Celotti et al., 2021).
- **Industry Effects:** Our analysis reveals significant industry-specific differences. Companies in industries such as Business Services and Construction & Engineering see higher win rates, likely due to the high demand for services in these sectors and fewer specialized competitors. In contrast, industries like Healthcare & Life Sciences and Transportation & Logistics exhibit lower win ratios, possibly due to the specialized nature of the work and the barriers to entry in these sectors.

Analyzing resource importance for tender wins, it is apparent that the average turnover and average profit are positively correlated with the win rate, indicating that financially stronger companies tend to have a higher probability of winning public tenders. This supports the idea that financial stability provides the necessary resources for preparing competitive bids, meeting tender requirements, and ensuring project execution capabilities.

Likewise, the average number of employees is also positively related to the win rate, though the effect is smaller compared to turnover and profit. This suggests that larger companies, which typically have more specialized personnel and internal capacity, may be more successful in managing tender processes and meeting the qualification requirements set by procurement authorities.

Overall, the analysis highlights that financial strength and organizational size play critical roles in determining tender outcomes. However, it also indicates that bidding on too many tenders without careful resource allocation may reduce the overall win rate, particularly for smaller companies (which may be deliberate strategy that is outside the scope of this research).

4.3. Study Limitations

This study has several limitations that should be acknowledged. First, the dataset used primarily captures financial metrics and tender participation, without including more nuanced qualitative factors, such as bidder experience or reputation, which might significantly influence tender success. Additionally, industry-specific dynamics were not deeply analyzed, though some industries could have different tender practices or barriers that affect competition and win rates differently.

Another limitation relates to the fact that the dataset does not capture tender-specific variables such as tender value, duration, or complexity, which are often critical factors in bid success. Future research could benefit from incorporating these variables to provide a more comprehensive understanding of how tender characteristics influence outcomes.

One important factor highlighted in the SME Needs Analysis in Public Procurement report is the role of information asymmetry, particularly in how SMEs perceive their eligibility for tenders. The report identifies that many smaller firms, especially those with negative growth or micro-enterprises, often believe they are disqualified from participating due to a misunderstanding of selection criteria or due to hidden information (such as incumbent presence). This misperception likely deters firms from engaging in tenders they could potentially win, however this study does not address this possible cause. Future research could explore how better communication strategies, e.g. clearer eligibility guidelines, might correct these misconceptions and increase SME participation in public procurement.

Lastly, while the dataset includes information on company size and financials, it does not account for bidder collaboration or joint ventures, which are common in large tenders. Exploring the impact of collaborative bids could provide further insights into the dynamics of winning tenders, particularly in sectors where pooling resources is common.

5. Conclusions

5.1. Summary of findings

This study has investigated the factors that affect the success rates of private companies in winning public sector tenders in Latvia. Through an analysis of tender participation data and company-level financial indicators, including turnover, profit, and employee count, several key insights emerged. Financially stronger companies, as evidenced by higher turnover and profit levels, tend to have higher success rates in public tenders. This finding underscores the importance of financial stability in the public procurement process, where companies with greater resources may have a competitive edge due to their ability to meet the often stringent financial and technical requirements.

While the number of employees was positively correlated with success, its impact was less pronounced compared to financial indicators. This suggests that while larger firms may have more administrative capacity to manage the complexities of the tender process, company size alone is not a sufficient predictor of tender success. The analysis also showed that the number of tenders a company bids on does not strongly correlate with its win ratio, implying that a more strategic approach to tender participation may yield better results than simply increasing bid frequency.

Overall, the relatively weak correlations between variables suggest that unmeasured factors, such as the quality of bidding strategies, industry-specific conditions, or the nature of individual tenders, likely play a critical role in determining tender outcomes. These findings offer valuable insights into the dynamics of public procurement competition in Latvia, particularly for private companies seeking to optimize their bidding strategies.

5.2. Practical implications

The results of this study have several important implications for companies and policymakers engaged in public procurement. For companies, the findings highlight the significance of financial stability in improving tender success rates. Firms aiming to increase their competitiveness should ensure they have sufficient financial resources to meet tender requirements. Moreover, adopting a more focused and strategic approach to selecting tenders—targeting those where the company has a competitive advantage—may be more effective than pursuing a high volume of bids.

For policymakers, the weak correlation between company size and success suggests that smaller firms could be better supported in public procurement by lowering administrative barriers and financial thresholds. Simplifying procurement procedures and enhancing transparency (e.g. through lowering qualification barriers on financial hurdles) could create a more inclusive competitive environment, increasing the diversity of participating firms. This would not only

benefit smaller companies but also improve overall procurement outcomes by fostering broader competition. Adjusting financial thresholds, such as turnover requirements, and improving access to finance through state-issued guarantees, better payment terms or other mechanisms could remove such barriers to resource-lacking companies.

For procurement authorities, the finding that financially stronger firms are more successful raises questions about the accessibility of public tenders to smaller businesses - and the issue of incumbent companies having substantial market power in tendering processes. Procurement could be adjusted to promote more equitable competition by reducing the financial and technical requirements that may disproportionately favor larger firms. Providing more robust support to smaller firms (training on tender processes or reducing excessive administrative burden) could encourage more diverse participation in public procurement.

5.3. Suggestions for future research

While this study provides valuable insights into the determinants of tender success in Latvia, it also reveals several areas for further investigation. Future research should focus on incorporating more detailed tender-specific data, such as tender value, complexity, and award criteria. These variables could offer a deeper understanding of how the nature of tenders themselves influences company success rates, particularly in relation to the financial and technical challenges posed by larger or more complex tenders.

The exploration of industry-specific dynamics would also enhance the analysis. A more granular examination of how different sectors, such as large industries (construction, technology) are affected by public procurement processes would provide insights into sectoral variations in tender outcomes. Industry-specific barriers, market concentration, and regulatory hurdles are likely to influence competition and tender success in ways that warrant closer study.

The inclusion of legal and procedural factors, such as the impact of different procurement laws and procedures, would also provide valuable insights, especially as they adopt over time. Understanding how various legal frameworks influence the competitiveness of tenders could inform policy reforms aimed at enhancing transparency and fairness in public procurement.

Lastly, expanding the scope of analysis to include cross-country comparison would help better understand how national differences in procurement practices affect competition and success rates for companies. Such comparative research could provide benchmarks for improving public procurement practices in Latvia and offer lessons for other EU member states facing similar challenges.

We hope this study contributes towards understanding public procurement dynamics in Latvia, while also laying the groundwork for future research aimed at

fostering a more competitive, transparent, and inclusive public procurement environment.

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