

Article

Bidding Strategy in Construction Public Procurement: A Contractor's Perspective

Tomáš Hanák ^{1,*} , Adriana Drozdová ¹ and Ivan Marović ² ¹ Faculty of Civil Engineering, Brno University of Technology, 602 00 Brno, Czech Republic; 175779@vutbr.cz² Faculty of Civil Engineering, University of Rijeka, HR-51000 Rijeka, Croatia; ivan.marovic@uniri.hr

* Correspondence: hanak.t@fce.vutbr.cz; Tel.: +420-541-148-131

Abstract: A contractor's ability to prepare a competitive bid for a construction tender is crucial for its survival on the market. The bid price estimation strategy should promote the probability of winning a sufficient amount of tenders but, at the same time, ensure the economic stability and development of the company. This paper aims to address this issue in the area of Czech public construction procurement. The opinions, experiences and practices of contractors were collected through a questionnaire survey, and the data were evaluated with the support of statistical methods. This revealed that Czech contractors mostly base their multicriteria bidding strategy on cost-oriented pricing while considering various aspects such as the risks and attractiveness of the tender. The Czech construction market is generally perceived as oriented toward low costs, and with a relatively common occurrence of abnormally low bids. The findings presented in this paper may help contractors improve their current bidding strategies in public construction procurement.

Keywords: bidding strategy; construction project; contractor; cost estimation; public procurement



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1. Introduction

In construction public procurement, the contracting authority (CA) aims to award the contract to a capable contractor based on the evaluation of submitted bids. Despite the growing emphasis on the use of multicriteria evaluation and the consideration of life-cycle costing [1] of buildings in recent years, the overwhelming majority of tenders are awarded based on the lowest bid price or, if multicriteria evaluation is used, the price is assigned the greatest weight. When preparing price bids, it is important to clearly understand the distinction between cost, price and value. According to Hackett and Statham [2], cost represents how efficiently the resources are spent by contractor, price expresses the amount for which the contractor sells the output, and value corresponds to the worth to the investor, who—in public procurement—is referred to as the CA. From the perspective of being competitive, the costs have to be below the price, and the value has to be higher than the bid price. It can pose a significant challenge for contractors to ensure their competitiveness in a tender, since the construction sector is mostly characterized as a competitive business environment driven by the low-cost approach [3].

The available body of knowledge in this area determines two main research directions. Firstly, the decision of whether to bid (bid/no bid decision); and secondly, setting the bid price (determining the expected costs and mark-up decision).

1.1. Bid/No Bid Decision

Bid/no bid decisions are simultaneously important and difficult for construction contractors. On one hand, contractors have to search for projects for which they can submit a bid in order to stay in the market. On the other hand, it is not desirable to bid on all available projects; instead, it is highly important to select only those tenders that are suitable for the company. Many researchers have focused recently on factors influencing bid/no bid decisions. Alsaedi et al. [4] identified the top six factors as being the size of the

job, the type of job, the company's strength in the industry, the designer/design quality, the rate of return and the project cash flow. According to Kiran Kumar and Raj [5], the amount of possible upcoming profitable projects in future, the current financial condition and having qualified material suppliers also constitute important influencing factors. Bid/no bid decisions also might be influenced by external macroeconomic factors such as supply–demand interaction (e.g., economic prosperity vs. downturn) [6]. In the case of a highly competitive market, unfocused strategic bidding by contractors can demonstrably result in bidding for many different types of projects, a wide range of contract sizes and many types of clients [7].

In this relation, several bid-decision models have been proposed based on various approaches, such as structural equation modeling with partial least squares, Analytic Hierarchy Process (AHP) and fuzzy AHP, support-vector machines or crystal-ball decision-engineering software [8–12]. Similarly, Biruk et al. [13] proposed a multi-attribute assessment of job attractiveness that helps justify potential participation in the tender. For support-vector machines, a very good performance of bid/no bid decision-making has been achieved and demonstrated for offshore oil and gas platform fabrication projects [10]. It is worth mentioning that more complex models have also been developed, supporting not only the bid/no bid decision, but also an assessment of the bid price [14,15]. An interesting tool has been proposed in [16], in which the authors created a bidder recommender to assist contractors in identifying the most suitable tenders, and this tool may thus be considered as an aid in supporting organizations' efficiency improvements.

1.2. Estimated Value of Procurement, Bid Price and Award Price Context

When a contractor decides to bid on a contract, an appropriate bidding strategy and an estimation of prices has to be prepared [17]. For public construction contracts, it is typical that the CA states an “estimated value of a procurement” (EVoP) expressing an indicative amount of money that the contracting authority estimates to pay for the performance of the public contract that shall be the net of the value-added tax [18]. In literature, this value is also often called the “tender price.” Hence, contractors may consider EVoP when determining the bid price.

Construction practices show that there are significant differences between EVoP, the award price and the actual price. It has been demonstrated that a positive correlation exists between the number of submitted bids and the award price [19], since higher competition in the tender leads to a decrease of the submitted bid prices. García Rodríguez et al. [20] claimed that EVoP is not an accurate estimator, and proposed an award price predictor considering 14 input variables such as EVoP, date, duration, and contracting authority name. Despite the fact that this estimator provides useful outputs, the authors noted that accurate estimates are impossible because the market is open, free, and consequently, unpredictable.

Furthermore, construction projects are known for their time delays and cost overruns. Hence, the award price is not always the same as the actual price paid by the contracting authority after the project is implemented. According to Larsen et al. [21], the most influential factor behind cost overruns is errors or omissions in project documentation. They believe that the project schedule, budget and quality are affected in significantly different ways; however, these variables are often interrelated as shown, e.g., the example of water supply system projects in terms of time and cost interdependence [22].

1.3. Setting Bid Price

To prepare a bid, it is crucial to study the contracting documents carefully. Sources from the ex ante tendering stage help contractors when deciding on their bid strategy [23]. High quality and detailed documentation (usually hundreds of pages for large-scale contracts) facilitates a smooth construction process, meeting project goals and preventing potential disputes. If contractors are provided with sufficient project documentation, an accurate cost estimation can be carried out. Fry et al. [24] claimed that companies provided

with a more accurate cost estimation are more likely to lower their bid prices, and thus increase their probability to win the contract.

Typically, significant cost differences occur in the tender process. A case of road-maintenance services in Sweden [25], for example, showed that the state-owned provider was considerably more expensive compared to private contractors. In this relation, Laryea and Hughes [26] pointed out that the bidding practice may also be dictated by company practices and not exclusively by project variables. Another perspective on the bidding strategy was proposed by Arslan et al. [27], who found that the amount of the bid price was determined by the relationship between a potential profit for the bidder and the probability of winning the tender. Thus, the bidder should seek an optimal balance between these two aspects; however, at the same time, the way in which the bid is proposed should be realistic and accurate.

The bidding strategy is also affected by the experience of the contractor. The experiment of Soo and Oo [28] showed that inexperienced bidders need more time to adapt to the varying levels of construction demands. Therefore, experienced bidders show greater competitiveness in tenders [29], and their bidding strategy is based on the latest information on the construction market. Ballesteros et al. [30] pointed out that quantifying which and how many bidders are likely to submit a bid for a specific tender is a key factor for optimizing the chances of winning the contract. For these purposes, having historical data from past tenders is of particular interest [31].

The estimation of direct costs is often based on standard construction rates published by credible organizations [32]. The costs should cover, *inter alia*, materials, labor, machines and the company's overhead [33]. However, in addition to costs, mark-up is also included in the bid price. In this regard, available literature suggests several bidding models; however, as noted in [14,34], estimating construction costs is rather more important than estimating the bid price. The bidding strategy hence includes the decision about mark-up, which should also cover specific items such as a consideration of risks. According to [35], contractors acknowledge the risk that they should price; therefore, identification of all relevant risk factors and assessing them appropriately [36] is essential. They pointed out that pricing the risk is quite difficult because of the market competition, and the final settlement thus depends on a set of complex microeconomic factors.

When deciding about mark-up, De Clerk and Demeulemeester [37] mentioned that contractors may directly increase the probability of winning the tender by decreasing the mark-up for initial projects while having expectations about future profits from potential following contracts. The mark-up decision should be linked to the final tender review with senior management and preceded by an estimation of costs in cooperation with potential subcontractors and risk assessment [17,38]. Setting an optimum mark-up should be considered crucial to the contractor's survival and success in the construction market [39]. According to [40], the estimated direct costs, competitiveness of other bids and the type of work are the three most significant factors affecting the bid mark-up decision in infrastructure projects.

A correct estimation of the price of work is essential, since a failure or misunderstanding involving cost estimation is among the most significant causes of conflict between contractors and investors [41]. In this context, researchers pay attention to the issue of abnormally low bids (ALBs). Fong and Choi [42] argue that the lowest bidders may fail to complete the project; for example, as a consequence of financial difficulties. This situation may occur due to factors such as bidding at a less-than-reasonable price just to get the contract to ensure the survival of the contractor [43]. However, Ulubelyi et al. [44] noted that underbidding should not be a problem in projects that have been effectively designed and implemented. Furthermore, more frequent ALB occurrence can be expected in public tenders using electronic reverse auctions [45]. Underbidding (underpricing) is becoming more common during a prolonged downturn in the construction market, as shown in Australia in 2012 [46]. Accordingly, it is of vital interest to set an appropriate price threshold for identifying ALBs [47].

1.4. The Research Problem and the Aim of This Paper

Generally speaking, the success of a bidding strategy depends mostly on the skill, experience and judgment of the estimator [35]. Related bid/no bid decisions and estimations of the bid price directly affect the economic efficiency of the contractor [13]. This paper does not focus on bid/no bid decisions. Instead, the research presented herein aims to reveal knowledge concerning how construction contractors approach the development of the bid price and how this affects their bidding success in public construction procurement. Since the legal environment, business practices and the market itself might differ in individual jurisdictions, the Czech Republic has been selected as a study area to provide insights involving a country that has been a member state of the European Union since 2004, and switched to a market economy in 1989. Therefore, the Czech Republic can be considered a representative of the region of central and southeastern Europe, where other countries (such as Poland, Hungary, Slovakia, Slovenia and Croatia) have experienced similar socio-political and economic changes.

Despite the fact that many papers have been published on bidding strategies to date, this paper addresses the research problem in an innovative way. In particular, an emphasis is placed on revealing potential aspects influencing the success of contractors in the bidding process using the example of a developed post-communist country. The study analyzes an effective mix of quantitative and qualitative data that enables both the evaluation of potential relations between selected variables, as well as an explanation of causes and effects.

2. Research Methodology

In order to learn about the opinions concerning bidding strategies of construction contractors, an online questionnaire survey was conducted. The questionnaire contained 22 questions and was divided into three parts. The introductory part asked about the basic characteristics of the respondents (i.e., the size of their company, their specialization in the construction industry and their participation in public procurement as a contractor). This information was necessary to verify that all the respondents that completed the questionnaire were suitable and could be included into the dataset, as well as to establish the size of the company in order to distinguish between micro, small, medium-sized and large companies according to the European Commission's recommendation concerning the definition of micro, small and medium-sized enterprises [48]. The second part focused on their success in public procurement and the factors influencing their estimations of bid prices such as EVoP, their procurement procedures and the use of multicriteria evaluation. The third and final part asked about issues concerning ALBs, extra work, disputes, mark-up and bill of quantities control. The list of survey questions is provided in Appendix A.

The questionnaire survey was distributed by means of direct e-mailing and by publishing an announcement on social media among construction professionals in the Czech Republic. Suitable respondents were searched for in suitable databases, such as that of the Association of Building Entrepreneurs of the Czech Republic [49] and Appropriate Publication Portal [50] (an online public procurement portal in which the active contractors in tenders for public works can be identified). In this manner, it was ensured that the invitation would be sent to companies that had sufficient experience in public construction tenders. Before the distribution, the questionnaire survey was reviewed by two experts in the field. In total, 470 companies were directly invited to take part in the survey. Data were collected during November 2020, and a total of 150 responses were received. After an initial data check, five responses were removed from the sample because the respondents were not experienced in the field of public construction procurement, and had experience only in the area of private tenders. Hence, the resulting dataset contained 145 responses. At the bottom of the questionnaire, respondents had an opportunity to add an optional note (not obligatory). Many of them added comments that suggested that this particular topic is of high interest to construction contractors. The completion and submission of

the questionnaire was completely anonymous in order to ensure the impartiality of the answers. Respondents mostly took less than 30 min to fill in the questionnaire.

In order to statistically verify whether an association existed between particular categorical variables, a chi-square test of independence was used with a 95% confidence interval. For the data evaluated by using Likert scale, a relative important index (RII) was applied. The calculation of RII ranking was processed by using the equation:

$$RII = \frac{\sum w}{A \times n}, \quad (1)$$

where $\sum w$ represents the sum of grades given to each factor, A is maximum assessment grade for each factor and n is the total number of respondents. The resulting RII value lies in the interval 0–1. With an increasing RII value, the factor gains in importance. As stated in [51], the RII method has been applied in many roughly similar cases.

3. Results and Discussion

3.1. General Description of the Dataset

Companies that took part in this research were mostly medium-sized companies (35.2%), followed by large, small and micro companies (26.9%, 26.2% and 11.7%, respectively). Such distribution of the sample according to the size of the company measured by the number of employees allowed us to perform certain analyses that took into consideration the categorical variable size of the company. Regarding the specialization of the companies, most were focused on construction of buildings, roads, water management structures and engineering (utility) networks. This points to the coverage of the entire construction sector and, therefore, the findings presented below do not pertain exclusively to one particular segment of the construction market; on the contrary, they are generally applicable.

The sample includes both companies that win only a relatively small number of public contracts per year (under four contracts; 31.7% of respondents), and companies that carry out hundreds of such contracts each year. Contractors usually participated in both public procurement and private tenders (95.9%); however, the sample also contained six companies that submit their bids exclusively in public procurement (4.1%).

3.2. Success in the Public Procurement and Factors Influencing the Estimation of Bid Price

Respondents were asked to state their success rate in public procurement over pre-defined intervals. Overall, 70 companies reported a success rate below 20%, 35 companies reported between 20% and 40% and 40 companies reported a success rate of more than 40%. These figures indicate that a large part of the study population had achieved relatively little success in public tenders. Nevertheless, if compared to the latest study [52], Czech companies report a higher success rate (in Jordan, 75% of companies have a success rate below 20%, while in the Czech Republic, this is true for just 48% of companies).

To examine this issue in more detail, we analyzed whether the success rate was dependent on the size of the company (Figure 1).

The data indicate that micro companies have a higher rate of success when compared to other categories. In particular, 59% of micro companies reported a success rate of over 40%. This can be attributed to the fact that many micro companies mostly take part in local small-scale tenders with a considerably lower level of competition. In order to prove whether there was a relationship between the above-mentioned two categorical variables, a chi-square test of independence was applied. The p -value for the chi-square statistics of 12.361 with six degrees of freedom was 0.0544. Since the p -value was greater than the significance level, we concluded that there was not enough evidence to suggest an association between the size of a company and its success rate in public procurement. Despite the fact that the graphical representation of the data in Figure 1 indicates a difference in the success rate for micro companies, the effect of company size was not statistically significant within the study population as a whole.

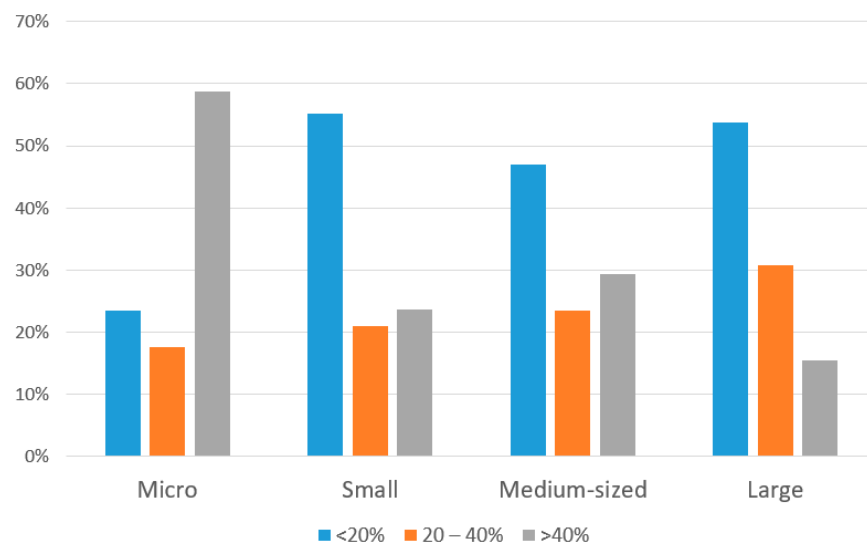


Figure 1. Success rate in public procurement according to the size of the company.

As contractors may be influenced by EVoP when determining their bid price, respondents were asked to evaluate how much they take EVoP into account (on a six-point Likert scale). The data was evaluated by using RII as shown in Table 1. Respondents were grouped according to their success rate in tenders (<20%, less successful companies—LSC; 20–40%, moderately successful companies—MSC; >40%, very successful companies—VSC).

Table 1. Influence of estimated value of procurement on bid price assessment.

Success Rate	RII
Less successful companies	0.3103
Moderately successful companies	0.1391
Highly successful companies	0.1724

As shown in Table 1, less successful companies paid more attention to EVoP than moderately and highly successful companies. This finding suggests that EVoP should be understood as just an indicative value, not a binding basis for bid price assessment. This can be justified by large differences between EVoPs and award prices not solely as a result of high competition in the tender, but rather as a result of inaccurate EVoP estimations. Smaller CAs especially tend not to have sufficient experience (experts) to estimate EVoP correctly. This also applies to certain specialized construction works that are not tendered by CAs on a regular basis, but only exceptionally.

In this relation, staff shortages also exist on the part of the contractors. Nine out of 17 micro companies (i.e., 53%) reported the absence of a department or a person responsible for bid price assessment. This also applied to two out of 38 small companies. Conversely, all medium-sized and large companies had at their disposal a department or a specialized person(s) for setting the bid price. This allowed us to conclude that with the increasing size of the company, the ability to cope with bid price estimation increases. The chi-square test of independence cannot be used in this case, since it is not suitable if the expected frequency is below 1 or if the expected frequency is less than 5 in more than 20% of the cells.

Regarding the pricing method, respondents were asked to choose from the following options: cost-oriented pricing (calculation of all the costs that can be attributed to a product/works), competition-oriented pricing (price is based on prices offered by the competitors) and demand-oriented pricing (price is adjusted to the fluctuations in demand).

As shown in Figure 2, most of the companies (86) applied the cost-oriented method, followed by demand-oriented pricing (30 respondents) and competition-oriented pricing

(21 respondents). The prevailing usage of the cost-oriented method is not a surprising result, as each construction project is unique and requires individual cost estimation. Furthermore, as standard construction rates published by recognized organizations are usually available (in the Czech Republic, two construction price databases are published), the pricing method for an overwhelming majority of contractors is naturally based on the costs resulting from the project documentation describing the subject of the tender. Demand-oriented pricing is applied when demand shows large changes in short periods of time; this applies, for instance, to construction works that are largely dependent on weather conditions and seasons. Finally, competition-oriented pricing can be effectively applied if the contractor is able to predict the prices offered by potential competitors in a particular tender (i.e., tenders for unique/highly specialized works in which the number of potential contractors is limited, and they know each other well). For “others,” respondents mostly indicated the usage of a combination of two or three of the above methods (e.g., cost-oriented to be aware about the costs and competition-oriented to set the mark-up for a specific tender).

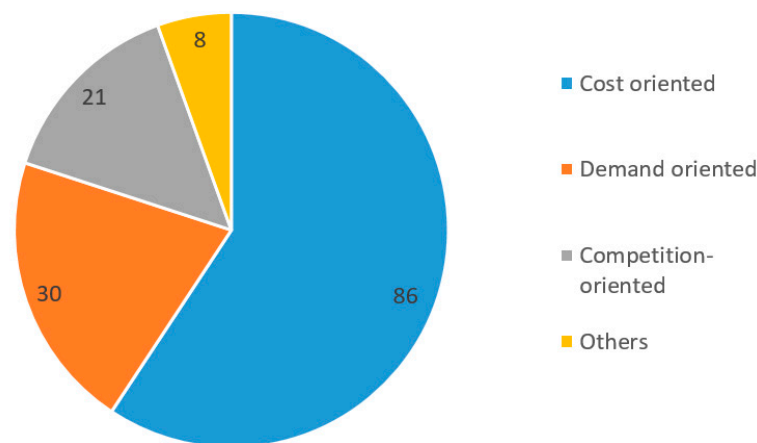


Figure 2. Usage of pricing methods (absolute frequency).

Interesting answers were collected concerning the influence of multicriteria evaluation on the bid price assessment. An overwhelming majority of respondents (73.1%) were not affected by a multicriteria evaluation of the tender when setting the bid price. Where positive answers were given, contractors were asked to explain in which way they were influenced. Among the responses submitted, it should be highlighted that risk assessment was taken into consideration in the context of the use of non-price evaluation criteria. For instance, if delivery time is used as evaluation criterion, the risks related to the “iron triangle” (i.e., the interplay of cost-time-quality issues [15,53]) should be considered. Since construction projects take a long time to complete, price risks can be managed by, for example, an index-based price adjustment mechanism [54]. Risk perception also is highlighted among the most critical factors in [55].

Few respondents noted the possibility of increasing the bid price if (a) the contractor can offer better performance in terms of other evaluation criteria such as delivery time or the financing method; (b) the quality is evaluated in the tender; or (c) contractual penalties are higher. Generally, contractors highlighted the importance of how the weights are assigned to particular evaluation criteria.

3.3. ALB, Extra Work and Mark-Up Issues Related to the Bid Price Estimation

The quality of the tender documentation is a prerequisite for a project’s success. Therefore, it is in the interest of contractors to check these documents carefully, especially the design documentation and the related bill of quantities. Respondents answered the question of whether they perform a documentation check. In Czech construction practices, most contractors said they perform the documentation check (73.8%) regularly, while 16.6% never do so. The rest of the respondents noted that they perform a documentation

check only occasionally due to time pressures (for selected tenders) or in a limited way (in all tenders, but they only check a few selected main items, for example). Some of the respondents mentioned that they decide about performing the check based on the character of the tender, the type of the CA, the desire to get the contract or the number of aggregated items used (the bill of quantities can be simplified by using “aggregated items”—joining several individual items that together cover all the work and materials necessary to construct a certain part of the structure). It can be expected that the number of errors in design documentation will decrease in the future in connection with the development of digital technology and modeling [56].

Regarding extra work, more than half of the companies did not strategize by submitting a lower bid price with the expectation of a compensation when claiming extra work during the delivery (Figure 3). Four respondents out of 145 provided a verbal answer claiming, for example, that not only extra work can be adjusted, but also cancelled work; or that the difficulty in predicting the amount of extra work makes it hard to strategize in such a way. These results are a bit surprising because in the construction practice, extra work is considered a good opportunity to improve the profitability of contracts. This strategy is also called “unbalanced bidding” and results from an asymmetric information between the CA and contractors on the ex ante estimated bill of quantities for individual work [57,58]. According to the presented results, unbalanced bidding is not among the common bidding strategies used in the Czech Republic. We attribute the low level of strategizing through extra work to the fact that some CAs use fixed-price contracts and practice proper construction supervision.

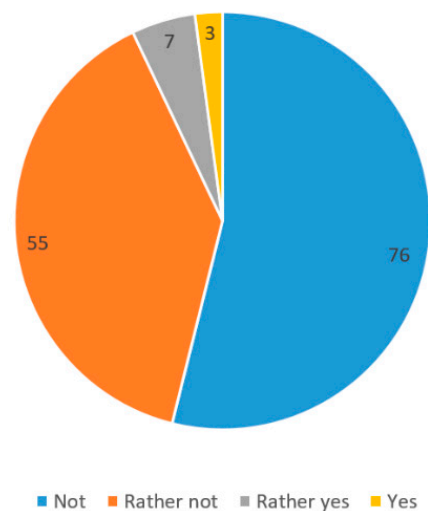


Figure 3. Expectations for extra-work compensation (absolute frequency, $n = 141$).

As extra work is a typical cause of disputes between contractual parties, one of the questions asked whether the respondents had dealt with such a problem in the previous five years. A total of 104 respondents (71.7%) noted that they had experienced this problem. Such disputes are becoming more complex, as extra work often occurs as a result of insufficient/erroneous design documents, which are usually delivered by a third party (this creates a trilateral dispute when the contractor and designer are not in a direct contractual relationship).

Almost balanced answers were received with regard to the ALB experience. A total of 44.8% of respondents reported that their company had previously been forced by various circumstances to submit a bid price at or below the level of the assessed costs. The reasons for such a low bid strategy were justified by: the survival of the company during the time of economic downturn caused by the global financial crisis [59]; future marketing purposes; obtaining valuable references; tendering outside the main season (winter time); preventing lay-offs and the consequent difficulties of recruiting new employees; a prospect of future

collaboration; and unused production capacity. This shows that there are many different reasons for submitting an ALB in a tender.

The finding that 53.1% of contractors have been called for an explanation of an ALB in the past is of particular interest. This proportion is higher than the share of respondents who have deliberately submitted ALBs (44.8%). This suggests that (1) a highly competitive environment may force contractors to lower their bid price significantly; (2) some contractors have efficient processes enabling them to submit a very favorable (low) bid price to the CA; or (3) the value of EVoP was not estimated correctly (i.e., was overestimated).

In the context of ALBs, another interesting issue is whether contractors apply a different approach to the assessment of the bid price if a particular tender is highly appealing to them. A total of 59.7% of respondents agreed that they apply a different cost approach when preparing a bid price for key appealing tenders. In particular, most of the respondents reported a decrease in mark-up. Moreover, contractors may achieve a lower bid price by: pushing subcontractor prices down; correcting key cost items in the bill of costs; performing an additional analysis of the key company's performance; considering production inputs such as prices of materials; or reducing calculated risks. Generally, it can be stated that companies decrease mark-up and seek various types of cost reductions when assessing bid prices for appealing tenders.

Regarding mark-up, contractors reported their average mark-up percentage (MuP). In this case, MuP is based on the total costs decreased by material costs. This approach was used in the questionnaire survey, as it corresponds to costing practices in the Czech Republic. A total of 115 respondents agreed to answer this question. The data in Figure 4 show that a majority of companies (63.5%) have a MuP below 10%. Just 9.6% and 5.2% of the population had a MuP value of between 16–20% and above 20%, respectively. This confirms the assumption that the construction market is typically a highly competitive environment.

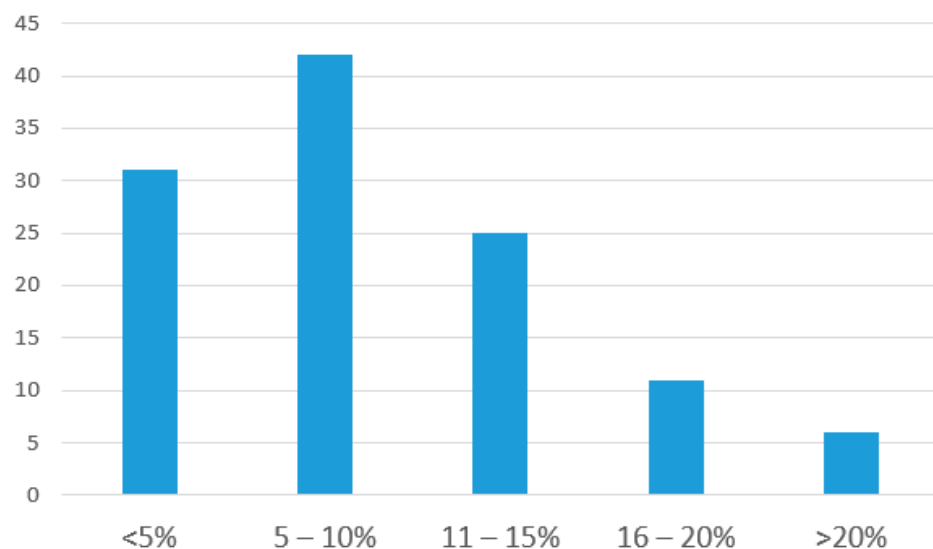


Figure 4. Absolute frequency of mark-up percentage distribution.

Additionally, a question was asked about whether MuP was higher in public procurement than in private tenders. The results indicate that a slight majority of contractors tend to claim having a higher MuP in private tenders; however, a considerable part of responses noted a higher MuP in public procurement. Such ambiguous evaluation can be attributed to the uniqueness of each particular tender regardless of if it is public or private.

The final analysis focused again on the success rate in procurement and its relationship to the application of a differentiated strategy for appealing tenders. Table 2 shows the absolute frequencies of the data, indicating a surprising fact that a larger part of companies

applying differentiated strategy were ranked among the less successful companies (57.0%), while among companies with an unchanging strategy, the share was just 33.5%. A similar difference can be observed in the proportion of very successful companies (20.9% and 37.9% for companies with differentiated and unchanging strategies, respectively).

Table 2. Influence of estimated value of procurement on bid price assessment.

Application of Different Strategy	LSC	MSC	VSC
Yes	49	19	18
No	20	16	22

The p -value for the chi-square statistics of 7.692 with two degrees of freedom was 0.0214. Since the p -value was lower than the significance level, it can be stated that there was insufficient evidence to suggest an association between the use of a differentiated strategy and the success rate in public procurement.

Such a surprising finding can be explained by the assumption that successful companies may achieve their success more frequently due to the overall efficiency of their internal processes (organization of work, allocation of resources, purchasing management, etc.). Hence, they are able to achieve a competitive bid price by conducting a standard cost assessment and applying an appropriate mark-up. On the other hand, many companies may become less competitive in tenders; for example, as a consequence of imprecise cost calculations or robust administration leading to a higher cost burden in terms of overhead.

4. Conclusions

This paper explored the effect of certain factors on the success of bidding processes in public construction procurement. The results presented herein support the statement of Leśniak and Radziejowska [60] that a bid decision should be supported by a consideration of various criteria (such as the attractiveness of the tender and the situation of the market). It was shown that Czech contractors mostly use cost-oriented pricing and apply a MuP below 10%. Regarding success in the tender, the findings suggested that construction companies should not conduct cost assessments that are directly based on the EVoP. Risk pricing should be adjusted, especially if a tender is evaluated by using multiple criteria. Finally, the results confirmed a low-cost orientation for Czech public construction procurement, with relatively frequent occurrence of ALBs, which is motivated by a wide range of reasons.

From a theoretical perspective, the findings presented in this paper expand current knowledge by providing valuable bidding insights from a developed post-communist country that is a part of the European single market, especially in terms of the factors influencing bidding success in the tender. For instance, it was revealed that unbalanced bidding is used relatively rarely by Czech contractors. Regarding managerial implications, this paper may help companies establish or improve current bidding strategies with the aim of increasing their chances of winning a tender. With respect to the study area, the research findings are applicable to the wider region of central and southeastern Europe, as this region has, in recent decades, undergone a similar political and economic transformation from a centrally planned economy with no private sector to a market-oriented economy. It is also typical for central and southeastern European countries that the lowest-bid approach continues to prevail, as opposed to an approach focused on life-cycle costing or a best-value approach.

The following two research limitations should be mentioned. First, the effect of corruption was not addressed in this paper. The authors are aware that this phenomenon exists; however, they are of the opinion that the problem of corruption is so complex and distinct in term of the subject matter that it deserves a separate investigation. Second, the individual types of tenders (open tender, selective tender, etc.) and some of the tender conditions (such as the use of e-auctions) were not considered either.

Future research may focus on particular construction market segments. It can be expected that certain differences and distinctive features might be revealed if, for example,

building and road construction sectors are compared. Such an approach will help prepare suggestions on how bidding strategies should be differentiated, with the aim of increasing the probability of submitting a winning bid.

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Data Availability Statement: Data are available from the authors upon request.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Survey Questions

Q1: Indicate the size of your company (according to the number of employees).

Q2: What is the specialisation of your company in the construction industry?

Q3: Indicate the average number of public tenders your company wins per year.

Q4: Indicate the average number of all tenders your company wins per year.

Q5: What is the success rate of your company in public tenders?

Q6: Assign points to the valuation methods of construction works in your company according to the frequency of their use.

Q7: Is there a department/specific person in your company responsible for bid price estimation?

Q8: Do you check the bill of quantities provided by the contracting authority?

Q9: Is your bid price influenced by the estimated value of procurement set by the contracting authority?

Q10: Is your bid price influenced by multicriteria evaluation and assigned criteria weights?

Q11: Is your bid price influenced by the conditions of the tender (e.g., the use of electronic auction)?

Q12: Which pricing method do you mostly use for bid price estimation?

Q13: Do you apply different approach to bid price estimation when your company is very interested in winning the contract as opposed to situations where winning the contract is not crucial?

Q14: How does your company determine the profit on the contract?

Q15: Is your mark-up higher in the public sector or in the private sector?

Q16: What is the numerical value of your average mark-up percentage (based to the total costs decreased by material costs)?

Q17: If your construction company uses subcontracting, what is the key criterion for selecting subcontractor?

Q18: Has your company ever been forced by various circumstances to submit a bid price in the amount at or below the level of the assessed costs?

Q19: Has your construction company ever been asked to explain the abnormally low bid price?

Q20: Does your company submit a lower bid price with the expectation of a compensation when claiming extra works during the delivery?

Q21: Extra works are the most common cause of disputes between the parties. Has your construction company dealt with a similar problem in the last 5 years?

Q22: If you would like to add something to your answers, or if you have more to say about this topic, please use the field below. Thank you very much for your cooperation.

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