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Impact of competition on prices in public sector procurement

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Abstract

Efficient use of public resources should be supported by quality management of the tender procedure to achieve competitive tender prices. This paper examines the issue of competitive environment within public works contracts and explores the influence of the number of bidders on the tender results. A research sample of 256 public tenders was investigated in order to evaluate two research hypotheses. Data evaluation was supported by interval plot, scatter plot and correlation analysis. It has been found that the number of bidders in the tender depends on the type of the subject matter of the tender; however, this difference does not have a significant impact on the level of competition. Another research finding supports the assumption that the number of bidders influences the relative difference between expected price and award price. It was concluded that contracting authorities must not only require a sufficient range of qualifications, but should also take any steps required to motivate a sufficient number of applicants to participate in the tender procedure to achieve competitive prices.

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Keywords: competition; construction project; price; public procurement; structure.

1. Introduction

Efficient use of public resources is one of the main challenges related to public investment. This concerns the whole life cycle of buildings (structures), starting from the design documentation to the demolition at the end of the lifetime of the investment. The overall success of the project is significantly affected, among other factors, also by the

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technical, economical and professional capability of the contractor who is awarded the tender. For this reason, the tender procedure should pay due attention to the scope of required qualifications. On the one hand, the qualification criteria should be set so as to only allow the participation of properly qualified candidates; on the other hand, the criteria should at the same time facilitate the creation of sufficient competition in the tender.

This paper belongs to a wider research area concerning the effectiveness and transparency of public procurement in the construction sector. In particular, it aims to examine the competitive environment of public tenders and to establish 1) whether the type of the structure influences the number of bidders in the tender and 2) whether the difference between the expected price of the contract and the award price depends on the number of bidders in the tender.

The paper is structured as follows: firstly, research background and related hypotheses are presented; secondly, research methodology is outlined; thirdly, results are presented and discussed; and finally, conclusions, including recommendations for public authorities and contractors, are provided.

2. Research background, hypotheses and methodology

Public tenders are often faced with problems such as participation of unqualified applicants, manipulative settings of qualifications or inappropriate methods of evaluating the bids. These are some of the reasons why procurement agenda belongs to major sources of risk for construction projects[1,2]. Improper management of tenders may be the result of deliberate action or just a lack of experience on the part of the responsible personnel. In practice, public authorities often consider qualifying procedures to be time consuming and wasteful[3]. However, qualification, together with the evaluation criteria, significantly influences the outcome of the tender procedure and the success of the project as a whole, i.e. whether the customers gets the best value for their money. Scholarly literature systematically describes various aspects of qualification and stresses that qualification must be evaluated by determining and defining a set of appropriate criteria[4]. The selection of a group of contractors who are most suitable to execute a given project can be supported by various models and methods (see e.g. [5,6,7]) and in practice, different types of criteria are applied to evaluate the ability of contractors to perform the contract[8]. From this viewpoint, the prerequisite for a successful qualification procedure with the perspective of achieving a reasonable price is the participation of a sufficient number of capable contractors in the tender.

The creation of a sufficiently competitive environment is desirable, because it can be assumed that the prices achieved in the tender will decrease with the increase of the number of bids submitted in the tender[9]. However, it may be difficult to ensure a competitive environment, because the number of bidders depends on a variety of aspects, e.g. the type of the subject matter (type of structure) or the volume of the project[10].

Since the efficiency of the investment should be considered from the perspective of its life-cycle[11], operation and maintenance costs need to be taken into account as well as construction costs[12]. However, the use of life-cycle costs in construction sector is rather rare in many countries (as evidenced e.g. for the Czech Republic and Poland[13]) and contracting authorities often select the winning bidder simply on the basis of the lowest bid price rather than on the basis of the most economically advantageous tender (multicriteria evaluation)[13]. In recent years, a significant rise in the frequency of use of the lowest price award criterion was observed in some countries (specifically, the Czech Republic and Ireland[14]). This method is sometimes criticized, since awarding the tender solely on the basis of the lowest bid may result in the submission of unreasonably low bids[15] that have to be rejected, which is a major shortcoming. Nevertheless, even in the case of multicriteria evaluation, the criterion of the bid price often weights more than 70%[13]; it is therefore obvious that this criterion will have a very significant influence in the overwhelming majority of public construction projects and the number of bidders has, therefore, a high potential to affect the efficiency of the tender.

2.1. Hypotheses

Since it can be reasonably expected that the number of bidders is an important variable closely related to certain aspects of the tender, the following two hypotheses were defined:

H1: The number of bidders in the tender is dependent on the type of structure.

H2: The number of bidders influences the ratio between the award price and the expected price in the tender.