



CONSTRUCTION CONTRACTOR PREQUALIFICATION FROM POLISH CLIENTS' PERSPECTIVE

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Abstract. A competent construction contractor is one of the indispensable conditions of a proper process and completion of a construction project. The article presents analysis results of the main criteria considered by Polish public clients in contractor competence evaluation. Research was carried out on the basis of demands stated by clients in restricted tenders announced in 2007. The author also presents research results of the methods and criteria for construction contractor selection, used by Polish private clients. To carry out the research a questionnaire was sent to 27 private clients at the turn of 2006/2007. The results of the research show that public clients in most of the restricted tenders use just one of the criteria used to qualify a candidate to the second stage of tender procedure and it is usually the contractor's experience. Generally, it is characterised by the number of realised projects similar to the ordered one. For private clients, in contractor competence evaluation, technical possibilities of a contractor are especially valued. Experience in similar investments realisation, their quality, the equipment owned, and the staff are the top qualities in the rankings. Appreciated, although to a smaller extent, is also financial reliability of a contractor. Yet, criteria connected with project management are those which are the least valued ones.

Keywords: contractor, prequalification, selection criteria, public client, private client, tendering.

1. Introduction

Choosing a proper construction contractor increases chances of successful completion of a construction project and fulfilling the client goals, first and foremost keeping the schedule of the cost, time and quality.

Construction contractors are very often selected during tendering. Tendering indeed gives a client a choice in awarding contract a company which proposes the lowest price and short construction cycles, but usually they do not allow to precisely evaluate a tenderer. At the same time there are more and more procedures in which the decisive criterion of choosing a tender is the price. In 2007 over 90% of public clients in Poland made use of such a method (Report PPO 2007). On the other hand, the research results show that the cheapest tenderers often have problems with completing the project. Hatush and Skitmore (1997b) think that accepting the lowest price is the basic cause of the project completion problems because very often lowering the price means lowering the quality. It is true in some cases.

The above conditions make that it is especially important to properly evaluate the contractor's predispositions to fulfill the tasks entrusted to him. One of the methods of such an evaluation is prequalification.

In the simplest meaning prequalification is a before-tendering procedure which allows to choose the most appropriate candidates from amongst those declaring willingness to participate in the tendering (Hatush, Skitmore 1997b). Prequalification is defined by Moore (1985) and

Stephen (1984) as the screening of construction contractors by project owners or their representatives according to a predetermined set of criteria deemed necessary for successful project performance, in order to determine the contractors competence or ability to participate in the project bid. Clough (1986) thinks that prequalification means that the firm which wants to participate in the tendering needs to be qualified before it can be issued bidding documents or before it can submit a proposal.

According to the survey of researches can be stated that contractor's selection problem is multi-criteria problem. Many multi-criteria techniques are proposed and applied for such problems' solution (Zavadskas and Vilutiene 2006; Zavadskas *et al.* 2008a, 2007). Banaitis and Banaitiene (2006), Mitkus and Trinkuniene (2006), Ginevicius and Podvezko (2006), Turskis (2008) and Zavadskas *et al.* (2008b), Plebankiewicz (2009) investigated assessment of construction firms and contractors evaluation problems.

Practically, we can speak about two kinds of prequalification, which can also constitute its two phases. In more general and common understanding prequalification is a form of "registering" the contractors capable of completing given tasks. Contractors are usually grouped depending on some chosen factors, like possessing specialist equipment to perform a given type of works. In effect this allows to form a "standing list", which should be updated in given periods of time (e.g. once a year). In this case only those contractors who have been placed on the list can apply for the possibility of participating in the

project. Such lists are formed in many countries by state organizations and big owners, but also small, private client (Palaneeswaran, Kumaraswamy 2001).

Prequalification may also mean selecting a group of contractors most suitable to execute a given project. This is so called "per project" prequalification. In this case a "short list" of contractors is formed. Prequalification, both in the "per project" and "standing list" form, is a commonly used procedure in many countries.

The purpose of this paper is to present the research results of the methods and criteria for construction contractor selection, used by Polish public and private clients. Research was carried out on the basis of demands stated by public clients in restricted tenders announced in 2007. The method used for the collection of the information from private clients was a questionnaire.

2. Literature review

Questionnaire surveys carried out by Russel, Hancher and Skibniewski (1992) in the USA allowed to gather data on prequalification among 173 owners, both public and private. Only 19 respondents (10%) revealed that they do not carry out prequalification of the contractors. It has to be stressed that only public owners admitted this. It means that all private clients admitted carrying out contractor prequalification.

In the research carried out in the UK (Jennings, Holt 1998) 80 contractor firms were taken into consideration. The firms were divided into three categories (large, medium and small) depending on the annual turnover. Small contractors are designated as those with a turnover of less than £5M, medium sized contractors are those with a turnover £5M – 50 and large contractors exceed £50M. The respondents were asked to give the number of contracts in which they carried out prequalification. The following results were obtained: small firms – 31%, medium firms – 48%, large firms – 72%. Thus, the highest percentage of contracts preceded by prequalification was pointed by large firms. Most contractors were prequalified "per project" (63%). However, small firms show that they are more often prequalified to the "standing list" than the "per project" one (respectively 56% and 44%). The medium firms respectively 35% and 65%, and for large firms 27% and 63%.

Research results published in 1995 (Holt, Omalaiye, Harris 1995) and concerning tendering practices in the UK show that for 63% of the clients prequalification based on "standing list" is the basis of awarding contract to a given company. It means that at the stage of tendering the contractor competence is no longer thoroughly analyzed and the cheapest tender wins. As much as 70% of public clients and 55% of private ones admitted following this practice. The method is not good because there may be quite a long gap between the company being prequalified on to the "standing list" and tendering procedure and in this period there may occur unfavorable changes in the construction company. Thus, independently of making use of a "standing list", it is advisable to prequalify contractors just for a given project.

The client, deciding on the contractor prequalification must make several decisions, ordering and determining the course of prequalification as well as the rules of evaluating the contractors. Russel (1992) describes the process of prequalification as an art where the basis is a subjective evaluation based on individual experience of the person assessing. Although the contractor prequalification to a great extent proceeds on the basis of a subjective assessment, there are numerous researches carried out in order to learn the prequalification criteria and also the degree of their importance for the client.

One of the simplest presentations of contractor prequalification criteria is that presented by Russel (1996). He distinguishes three basic groups of criteria:

- Preliminary screening criteria (among others: references, reputation, past performance,
- Contractor resources (financial, technical, status of current work program),
- Others items (project specific criteria).

Quite interesting are the criteria presented by the Palaneeswaran and Kumaraswamy (2001). The following groups of criteria have been suggested:

- Responsiveness – promptness, realism, completeness – meeting deadlines, correctness and valid information, totality in providing information,
- Responsibility – obeying the law and complying with local government regulations, standards and bylaws, quality system, safety system,
- Competence – recourse (financial, machinery, plant and equipment, human resources), experience, constraints (current workload, subcontracts, guarantees).

A standard set of criteria applied by owners is provided in the further part of the article.

The aim of prequalification is often not only contractor competence evaluation but also limitation of potential bidders. In such a case it is necessary not only to judge whether the contractor fulfills the basic criteria, but also to what degree they are fulfilled. Not all criteria are equally important for the client. The basic issue is assigning the right weights to the criteria.

In many countries extensive researches on the importance of particular criteria in the prequalification process were carried out. Questionnaires sent out by Russel, Hancher and Skibniewski (1992) in the USA allowed to select criteria taken into consideration by public and private clients. Both client groups point out as the most important criteria: financial stability, contractor's failing to complete a contract, experience, success of completed projects. It should be emphasized that public clients stress financial conditions while private ones experience.

Research carried out in the UK (Jennings, Holt 1998) allowed finding the factors that are the most important in the process of prequalification in the opinion of contractors. As the most important factors considered in contractor prequalification the following are enumerated: company experience of similar construction, company reputation, company financial standing.

3. Principles of contractor selection by public clients

Public clients in Poland are obliged to choose the contractor in agreement with the Polish law. Since 2 March 2004 the Public Procurement Law (issued on 29 January, with later amendments) has been in effect, which does not expect contractor prequalification, as a procedure before tendering.

From the point of view of contractor evaluation, the procedures for awarding contracts may be divided into two groups (Plebankiewicz 2006):

- single ranking procedures (open tendering, negotiated procedure without publication, request-for-quotations procedure) in which contractor ability evaluation (according to: comply/does not comply with formula) and the choice of a tender take place in one stage of the procedure.
- double ranking procedure (restricted tendering, negotiated procedure with publication, competitive dialogue) in which a contractor evaluation is definitely separated from a tender evaluation. In the double ranking procedure two basic stages can be distinguished:
 - stage I – contractor selection, where subjective evaluation follows.
 - stage II – evaluation of tenders submitted by the contractors successful in stage I.

Generally, double ranking procedures allow the client to check in more detail the contractor ability to fulfill the contract. The client can check contractor's meeting the basic criteria, as well as, in the initial stage, state what features of a contractor are most important for him. A contractor, in turn, incurs lower costs of participating in the procedure, because his chances of getting the contract are decided upon during subjective evaluation, at the early stage of procedure, before he pays for making a tender. Taking into consideration the fact that Polish regulations do not include contractor prequalification, these procedures, and especially restricted tendering, being a primary procedure, should be more and more often made use of by public clients.

The reports of Public Procurement Office show that in the case of general contracts above €60.000 the most often chosen are primary procedures, that is open and restricted tendering (in 2006 – 76.81%, in 2005 – 84.9%) among them decidedly more often open type of tendering procedure was used (in 2006 – 80.96%, in 2005 – 89.3%). Similar trends are characteristic of construction work contracts.

4. Constructor selection criteria in restricted tenders

To learn about the criteria having a decisive significance for public clients, contract notices (which appeared in Public Procurement Bulletins in 2007) of restricted tenders for construction works were analyzed. Contract notices in Małopolskie and Dolnośląskie regions were chosen. In the period investigated there appeared 179 notices for a restricted tendering. In all notice the clients requested the documents confirm that the contractor is authorized to carry out specified activity or task, has neces-

sary knowledge and experience, at its disposal technical potential and personnel capable of executing the contract, and is in an economic and financial situation ensuring the execution of a contract. Lack of any of the requested documents automatically excluded the contractor. The catalogue of subjective and objective documents, which may be requested from the contractor, mentions (on the basis of Article 25 Public Procurement Law) the Prime Minister's regulation. The Prime Minister's regulation on the types of documents which may be requested by the awarding entity from the economic operator and forms in which these documents may be submitted has been in effect since 19 May 2006.

The clients were additionally obliged to advertise which criteria will be taken into consideration if the number of contractors fulfilling the conditions of participating in the tendering exceeds the number determined by the client. 62% of the clients restricted the number to five contractors.

In 57 analyzed cases the clients did not provide precise criteria for the second stage of qualification. 165 notices were then analyzed in respect of the criteria. Table 1 shows criteria pointed out by clients in the analyzed tenderings. Table 2 shows the number of criteria taken into consideration.

In most of the investigated procedures (99.18%) clients stated contractor's experience as the basic criterion of being qualified to the second stage of a tendering. Generally, it is characterized by a given number of completed similar projects. To confirm the quality of completed projects, clients usually requested references from previous clients. Only in one case there was no experience criterion, instead points were given for the financial standing of the contractor.

Table 1. Contractor's selection criteria in restricted tenders

Criteria	Number of tenders	Tenders percent share
Experience	121	99.18
Financial standing	20	16.39
Policy rate (from civil liability)	14	11.48
Personnel potential	2	1.64
Number of employed	2	1.64
Other	5	4.10

Table 2. The number of criteria used by public clients

Number of criteria	Number of tenders	Tenders percent share
one	84	68.85
two	35	28.69
three	1	0.82
four	2	1.64

In over 16% of cases clients admitted an additional criterion of financial standing. Evaluating financial situation clients take into consideration: possessed financial resources, being creditworthy, sale revenue, turnovers, profit. The rate of civil liability policy also proved significantly important, it was pointed out in 11% of tenders. Only in some cases clients stressed the meaning of the

number of people employed and staff potential, that is personnel having proper qualifications and experience for the project. Other criteria, such as guarantee above the determined minimum or hastening completion of works, refer more to the project itself than to the features of a contractor.

In over 68% of the investigated cases only one criterion was decisive in qualifying to the second stage of tendering. In one case it was a financial standing, in others – experience. Over 28% were the procedures in which two criteria were decisive – mostly experience connected with the financial standing or policy rate. Yet in those cases experience was more important. It means that contractors who are most experienced in similar works and have confirmation of having them done properly have the biggest chances to get a contract.

5. Private clients – the way of carrying out research and respondents' characteristics

At the turn of 2007 and 2008 the author carried out a pilot study among private clients. Its aim was to determine both methods and criteria of contractor selection used by private clients. The assumption was that the study will comprise clients who systematically award contracts and therefore have experience in selecting contractors. They also have developed methods of selecting contractors. 27 clients were chosen, among them 18 (67% of studied cases) are housing cooperatives and the remaining nine (33%) are developer companies. The participants were asked to fill in a questionnaire sent by e-mail.

The data received show that majority of clients do not possess their own construction units executing construction works (10 clients, that is 63% of those participating in the research) and therefore select the contractors to execute all the works. Among the remaining, 22% (6 clients) award over 75% of all the works executed. Fig. 1 presents respondents characteristics, taking into consideration the number of awarded works.

Most of clients are connected with housing construction (96%), only one developer awards office buildings execution. 22% of the respondents deal only with housing building, 37% awards only renovating works contract and the remaining 37% both new realizations and renovating works in housing building. The structure is presented in Fig. 2.

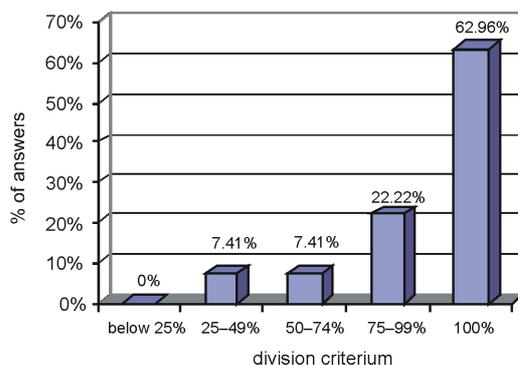


Fig. 1. Number of awarded works to external contractors

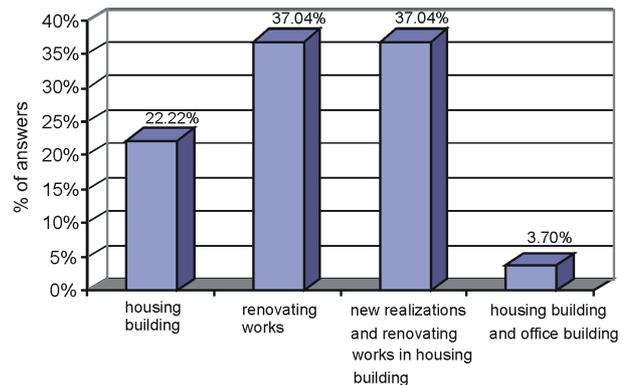


Fig. 2. Type of works awarded by private clients

6. Contractor selection methods

Private clients can use any procedures of contractor selection.

Respondents mentioned: open tendering (59%), restricted tendering (30%), negotiations with several contractors (63%), negotiations with one contractor (30%), single-source procurement (7%). Data are given in Fig. 3. In single cases the answers were – evaluation of hitherto cooperating contractors – having the “List of Qualified Contractors”, request-for-quotations, tender competition. Most clients declared using some procedures of contractor selection. 4 respondents use only open tendering and 5 only negotiations with several contractors. Generally, clients more often use tendering procedures. (Fig. 4).

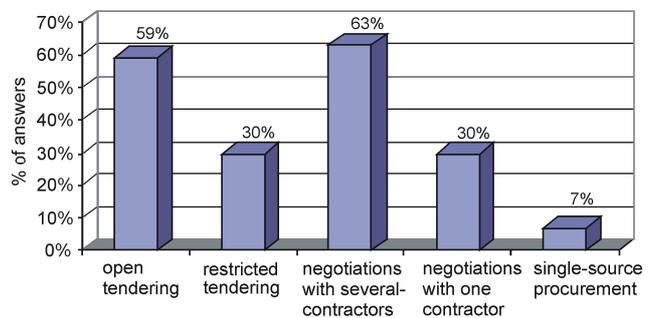


Fig. 3. Contractor selection procedures

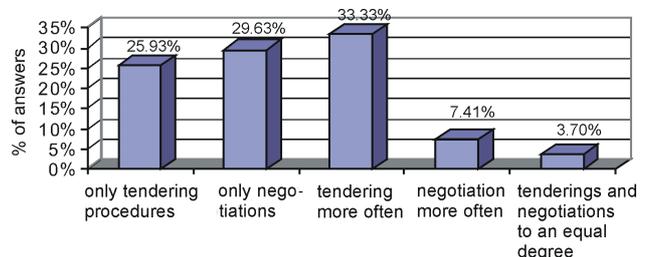


Fig. 4. Frequency of using tendering and negotiation procedures

Private clients have possibility of using contractor prequalification. 52% of respondents declare using it, among them only 22% evaluate contractors before placing tenders, which means that they have a worked out prequalification procedure (Fig. 5).

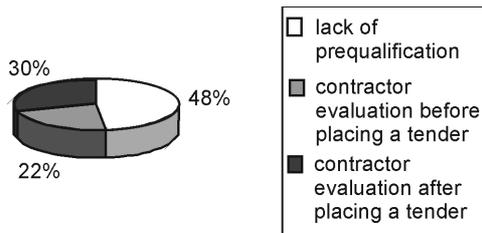


Fig. 5. Using contractor prequalification by private clients

Most often it is initial evaluation according to assumed criteria. As a rule, company experience is taken into consideration, which is evaluated by the number and quality of the executed works. In case a company which applies for awarding contracts for a given client for the first time, the basis are references from other clients. The remaining criteria are: reliability, company market position, financial standing. As a basis of selection contact with ex-employers and visits to the objects executed were also mentioned. In the answers attention was also paid to the fact of lack of time for a detailed evaluation of the contractors and its subjectivity. Although few clients use contractor prequalification, majority of them evaluate contractor companies after completing cooperation (89%) and have their data (67%) stored. As much as 89% of the respondents declare using preferences for the firms with whom past cooperation was successful.

The basic information source about a contractor are documents, certificates and data contained in the tender. About 67% of the respondents declare that they additionally make use of the opinion of the clients for whom an evaluated contractor executed works in the past. To a lower degree, information is obtained from professional associations (11%) and economic inquiry office (15%). As other information sources there were mentioned personal contacts, individual opinions and knowledge of the construction market. Fig. 6 presents sources of data about contractors.

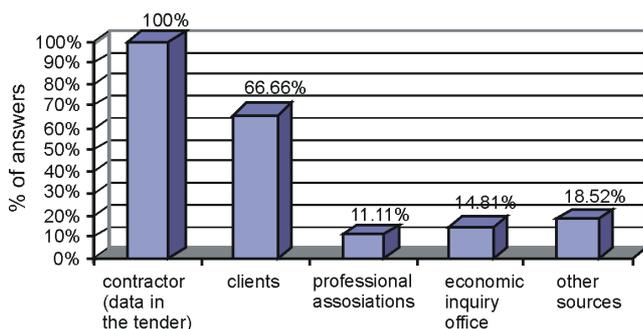


Fig. 6. Sources of data about contractors

7. Selection criteria used by private clients

One of the research goals was obtaining criteria ranking which clients take into consideration when evaluating a contractor’s competence. 5 basic criteria and 21 subcriteria which further characterized the basic ones, were taken into account. The proposed factors were established on the basis of literature – among others: Wong (2004),

Khosrowshahi (1999), Hatush and Skitmore (1997a), Holt (1996), Kumarasaswamy (1996), Russell and Skibniewski (1988), Russell and Skibniewski (1990), Bubbshalt and Al-Gobali (1996), Topcu (2004), Hatush and Skitmore (1997b). They are shown in Table 3. Clients could also determine other, in their opinion, important factors, but all of them admitted that their range is sufficient.

Table 3. Prequalification criteria

Criteria	Example subcriteria
Financial standing	1. Financial stability 2. Turnover, profit, obligations, amounts due 3. Owned financial funds
Technical ability	1. Experience 2. Plant and equipment 3. Personnel
Management capability	1. Past performance and quality 2. Quality control policy 3. Quality management system 4. Project management system 5. Experience of technical personnel 6. Management knowledge
Health and safety	1. Accidents 2. Health and safety management system 3. Insurance policy
Reputation	1. Past failures in completed projects 2. Number of years in construction 3. Past client relationships 4. Cooperation with contactors

Respondents were asked to evaluate criteria and then subcriteria in the scale: 0 to 6 (0 – not important, 6 – the most important). On this basis there were determined for each criterion: an average evaluation mark, importance index and percent of answers in which clients chose low (≤ 2), average (3) and high evaluation mark (≥ 4).

Average evaluation mark was determined as arithmetic mean, using the rule:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^n x_i, \tag{1}$$

where: x_i – evaluation mark assigned to criterion, N – general number of answers;

Importance index was obtained in the following way:

$$I = \bar{x} \frac{100}{7}. \tag{2}$$

Owing to this, it was possible to state the importance of each answer and to arrange the factors from the least to the most important ones when evaluating contractor competence. Results referring to basic criteria are placed in Table 4, while in Table 5 there are results referring to subcriteria.

The distribution in the population (criteria and subcriteria evaluation) are normal at the $\alpha = 0.10$ level of significance. To this extent we can say that the results are reliable.

Table 4. Contractor evaluation criteria

Criteria	Percent of answers			Average evaluation mark	Importance index	Ranking order
	≤2	3	≥4			
Technical ability	0.00	3.70	96.30	5.41	90.12	1
Reputation	3.70	7.41	85.19	4.96	82.72	2
Financial standing	0.00	18.52	81.48	4.63	77.16	3
Management capability	11.11	7.41	81.48	4.48	74.69	4
Health and safety	25.93	18.52	55.56	3.67	61.11	5

Table 5. Contractor evaluation subcriteria

Subcriteria	Percent of answers			Average evaluation mark	Importance index	Ranking order
	≤2	3	≥4			
Company experience of similar projects	0.00	3.70	96.30	5.59	93.21	1
Past performance and quality	3.70	0.00	96.30	5.22	87.04	2
Experience of technical personnel	3.70	3.70	92.59	5.04	83.95	3
Company renown and market opinion	3.70	7.41	88.89	5.00	83.33	4
Possessed plant and equipment	3.70	7.41	88.89	4.96	82.72	5
Management personnel	7.41	3.70	88.89	4.89	81.48	6
References from past clients	7.41	3.70	88.89	4.89	81.48	6
Success in completed projects	7.41	7.41	85.19	4.70	78.40	7
Past failures in completed projects	11.11	7.41	81.48	4.52	75.31	8
Insurance policy	14.81	7.41	77.78	4.48	74.69	9
Financial stability	7.41	14.81	77.78	4.41	73.46	10
Cooperation with contractors	18.52	7.41	74.07	4.11	68.52	11
Financial measures and borrowing power	14.81	11.11	74.07	3.93	65.43	12
Past client relationships	22.22	3.70	74.07	3.85	64.20	13
Number of years in construction	22.22	14.81	62.96	3.63	60.49	14
Quality control policy	29.63	14.81	55.56	3.30	54.94	15
Health and safety management system	40.74	14.81	44.44	2.89	48.15	16
Management knowledge	33.33	18.52	48.15	2.85	47.53	17
Accidents	40.74	18.52	40.74	2.70	45.06	18
Project management system	51.85	11.11	37.04	2.19	36.42	19
Quality management system	55.56	7.41	37.04	2.15	35.80	20

The clients stated technical ability of an evaluated contractor as the most important criterion. Average mark for this criterion is 5.59 and over 96% clients consider them as very important. None of the clients gave it a lower mark than 3. Other criteria are in sequence – reputation, financial standing, management capability, health and safety. It should be stated that none of the criteria got an average mark below 3, which means that all of them are important for the clients.

Subcriteria evaluation by clients confirms that the most important for them are technical ability of the contractor. Experience, past performance and quality, possessed plant and equipment, personnel come at the top of the ranking. Somewhat surprising are rather low places taken by subcriteria characterizing financial possibilities of the contractor – financial stability (tenth on the list), financial means and borrowing power - twelfth on the list. Criteria connected with project management system are not very appreciated.

8. Conclusions

This paper investigated the methods and criteria for construction contractor selection, used by Polish public and private clients.

The law being in force in Poland does not allow a detailed, before-tender procedure of evaluating the contractor. The results of the research show that public clients in most of the studied procedures use just one of the criteria used to qualify a candidate to the second stage of tendering procedure and it is usually the contractor's experience.

Majority of studied private clients evaluate contractor companies after having completed their cooperation, they keep their data and also declare giving preferences for those companies with which their cooperation was successful. This proves that they pay great attention to reliability and competence of the contractors. Despite this, not many of them have a worked out procedure of prequalification.

Lastly, the results of this paper have provided a starting position for development of a realistic model of prequalification of construction contractors.

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IŠANKSTINIS STATYBOS RANGOVO VERTINIMAS LENKIJOS UŽSAKOVŲ POŽIŪRIU

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S a n t r a u k a

Statybos rangovo kompetencija – viena iš privalomų sąlygų tinkamai vykdyti statybos projektą ir užtikrinti, kad jis bus užbaigtas. Straipsnyje pristatyta Lenkijos viešojo sektoriaus klientų nustatytų svarbiausių rodiklių rangovo kompetencijos vertinimo analizė. Tyrimo metu buvo remtasi klientų reikalavimais, nustatytais uždarų konkursų, vykusių 2007 m., metu. Autorė taip pat pristato Lenkijos viešojo sektoriaus taikomų metodų ir rodiklių statybos rangovų atrankai tyrimų rezultatus. Tyrimo metu klausimynas buvo išsiųstas 27 klientams. Tyrimų rezultatai parodė, kad viešojo sektoriaus užsakovai daugumoje uždarų konkursų pirmame etape kandidatui vertinti naudoja tik vieną rodiklį ir tai dažniausia yra rangovo patirtis. Bendroju atveju vertinama pagal įgyvendintų projektų, panašių į konkursinį, skaičių. Privačiame sektoriuje vertinant rangovo kompetenciją ypatingas dėmesys kreipiamas į technines rangovo galimybes. Panašių investicinių projektų vykdymo patirtis, darbų kokybė, turima įranga ir personalas yra pagrindiniai atrankos rodikliai. Finansinis rangovo patikimumas vertinamas, bet rečiau. Rodikliai, susiję su projektų valdymu, vertinami labai retai.

Reikšminiai žodžiai: rangovas, išankstinis vertinimas, atrankos kriterijai, viešojo sektoriaus užsakovas, privataus sektoriaus užsakovas, konkursas.

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