

# UK CONSTRUCTION CLIENTS' OPINIONS OF THE CONTRACTOR SELECTION PROCESS

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The rigour of the methodology used to select a main contractor ultimately impacts the outcome of a project. Combined quantitative and qualitative assessment of contractors' attributes can facilitate selection of a good contractor. Quantitative approaches include: multivariate discriminant analysis; multiple regression; fuzzy set theory; the PERT approach; and cluster analysis. Growing awareness of these selection methods reflect the increasing needs of the industry and importance attached to the selection task. However, lack of attention has been given to clients' opinions impacting the selection process, particularly, in aiding the knowledge of understanding contractors' attributes. This paper surveyed UK construction clients in this respect to elicit clients' preferences and opinions regarding contractor pre-qualification practices, and final selection methods and opinions. Findings from analysis of these data are presented. Direction for future research is also provided.

Keywords: contractor pre-qualification, lowest-priced tender, project-specific criteria, pre-qualification, tendering.

## INTRODUCTION

Complexity of contractor selection methodologies has increasingly been based on objective and quantitative evaluation. Study of recent research and good guidance documents has confirmed a growing recognition of this need for a systematic and objective approach in the contractor selection process (Hatush and Skitmore 1997, Holt *et al.* 1995a, Construction Industry Board 1997a, CIRIA 1998). Meanwhile, in the context of contractor selection and evaluation, there have been a number of contributions to knowledge for quantitative selection. These works have been complemented by other researchers (Potter and Sanvido 1994, Ng and Skitmore 1995, Holt 1998). Latham (1994) recommended a single and central UK contractor list for standard pre-qualification practice. This recommendation was later implemented by the Construction Industry Board (1997b, 1997c) who aimed to deliver a standard contractor pre-qualification list. Consequently, a new National Qualification System (NQS) on-line database for UK construction clients, consultants and contractors was launched late in 1997 (DETR 1999). It is evident that the principal aim here is to encourage objective evaluation and selection, particularly, in that the lowest price philosophy still appears deeply rooted in the construction industry. The latter has been underlined by the findings of Baker and Orsaah (1988), Merna and Smith (1990), Holt *et al.* (1995b) and Jennings and Holt (1998).

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A recent survey conducted amongst UK construction clients for this study, found inherent problems and potential conflict regarding implementation of a standard pre-qualification list. Also, the final evaluation of contractors is still mainly based on the lowest price philosophy. The paper discusses current developments and highlights a number of issues that have directly contributed as barriers to adoption of standard pre-qualification practice, particularly, the use of a standard pre-qualification list. Second, the paper studies clients' perceptions of project-specific criteria (PSC) i.e. those criteria applied during evaluation of tenderers, and the levels of importance attached to lowest-price wins practice. The relationship and degree of importance shared between PSC and low-price criteria are discussed.

## **METHODOLOGY**

The investigation was undertaken via a detailed literature review, followed by a pilot study and subsequent main survey. The pilot survey studied clients' opinions regarding use of contractor pre-qualification lists and was conducted via semi-structured interviews and structured postal questionnaire surveys. This interview survey was conducted amongst 15 construction practitioners; 6 each from public and private clients respectively and 3 from contractors. The initial questionnaire survey consisted of 248 public and 186 private; there were 37 (15%) and 23 (12%) returned respectively. The main survey i.e. second questionnaire survey investigated clients' perceptions of PSC and levels of importance attached to PSC and lowest-price wins practices. The survey was carried out amongst 250 UK public clients and 200 private clients. The responses were 51 (20%) from public and 35 (18%) from public sectors. Data were analysed using descriptive statistical analysis in the pilot survey. Relative Index (RI) and Spearman's Correlation Coefficient (SCC) test by SPSS Version 8.0 were used in the main survey. For brevity the discussion concentrates on the findings.

## **CONTRACTOR PRE-QUALIFICATION**

The term contractor pre-qualification means a process of evaluating a group of contractors for their suitability to be added to a contractor list, such as contractor standing list, approved list and project list. The process is concerned with considering contractors according to their capability for the proposed list, or proposed project with regard to contractors' past performance / experience, managerial, technical and financial characteristics. Qualified contractors become eligible for inclusion on such lists, hereafter called pre-qualification list. The term pre-qualification system involves the means of scrutinizing contractors, assessing and compiling a list of qualified contractors, revising of the list(s), and rotation of contractors for invitation to tender. A standard pre-qualification list in Latham's recommendations means a single, and central form of contractor pre-qualification list intended for use by all public clients and / or private clients. Other contractor lists i.e. ad-hoc lists, may be described as contractor lists being used in situations other than that described above; where these lists are compiled based upon a self-developed database and / or experience. The first component of this paper aimed to discover clients' opinions in light of using a standard list. Such observation includes: type of pre-qualification lists being used over the past two years; method(s) of investigation used to evaluate contractors during qualification; and common problems and deficiencies of these varieties of pre-qualification lists.

## THE PILOT SURVEY

This revealed that two-thirds of clients preferred their own ad-hoc list(s) despite easy access to a standard pre-qualification list (i.e. NQS). The major reasons cited for this were lack of flexibility associated with standard lists and their inability to consider project-specific criteria and / or clients' individual preferences. In other aspects, 83% of clients reported that a standard list can not cope with the demands of a project in certain specific areas, such as project functional requirements, locality and remotely located projects. Approximately 60% of clients preferred partnering arrangements instead of the traditional pre-qualification system, mainly, because they could achieve instant contact with contractors, particularly, with whom they have prior working relationships. In other words, partnering saves time, cost and administration. Some clients preferred to have three to six main contractors for a project where they picked from a pool of contractors available on a routine basis. It is likely to suggest that, partnering arrangements are becoming increasingly favoured to the more traditional contract-based selection practices. This finding is in line with a recent survey conducted by Holt and Fraser (1999). Contractors revealed that for them to be included on a standing list, they were often asked by clients to submit different types of pre-qualification form. It was also confirmed that a special work task had been set up by them in response to the increased use of different pre-qualification enquiries. It was believed that, by adopting this approach they could achieve a good submission when invited to pre-qualify.

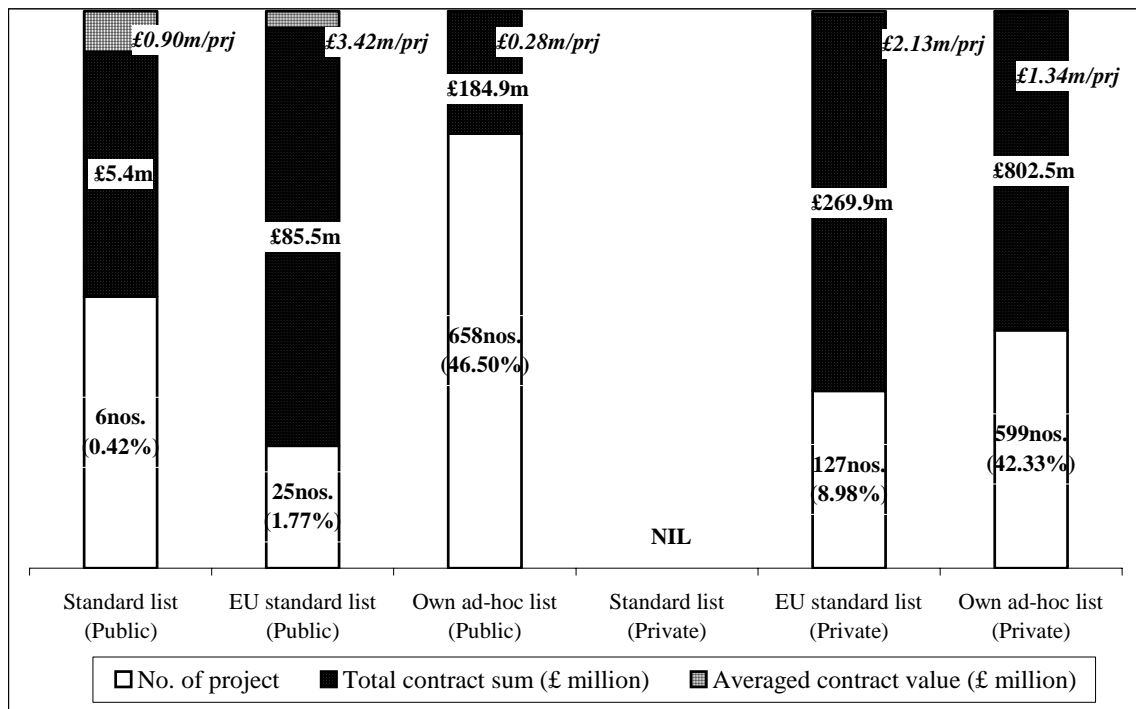
## THE MAIN SURVEY

Figure 1 shows the total value and number of projects undertaken in the past two years by respondents. Of these, 89% (1,257) of the projects were awarded based on ad-hoc lists and 11% (158) in standard lists. That is, an average of £0.79 million per project in ad-hoc lists and £2.28 million in standard lists. These figures indicate that a larger number of projects with smaller contract sums were awarded using their own ad-hoc lists.

There are 152 projects with total £355 million (public and private combined) were awarded under European Union (EU) procurement directives (i.e. Official Journal of the European Communities- OJEC). This confirming that development of the single European market and use of a standard pre-qualification list in European cross-border trade is significant. Based on the findings, it is likely that the impact of this will encourage the use of a standard and central UK pre-qualification list (or system) for future official contractor lists in the EU, as cited by Latham (1994) and the Construction Industry Board (1997b, 1997c).

The survey also found that only 4.5% of the total respondents used standard lists; whilst 50.5% used ad-hoc lists and 45% indicated use of both types of list. Nevertheless, 79% of respondents indicated that flexibility constituted the major problem and causing reluctance to use standard list. Other reasons cited in this respect are exhibited in the Appendix. The underlying theme is, a majority of clients preferred their own ad-hoc list(s) rather than a standard list, particularly, clients involved in small projects. By this, they can achieve more flexibility and tolerance to meet their specific projects' needs.

Private clients indicated that they use a variety of methods to investigate contractors' past performance, experiences and capabilities when pre-qualifying. These include: enquiry letter / questionnaire; contacting referees / third parties; information from pre-



**Figure 1:** Total contract sums and number of projects assigned for different pre-qualification lists for building, civil engineering and other construction works

qualification list; invitation for an interview; and other methods. In contrast, public clients tend to follow more formal investigation modes e.g. enquiry letter or questionnaire and contacting referees or third parties.

One can reasonably assume that these characteristics reflect the onus on public clients to show public accountability and to be seen to exercise fair judgement. However, comments from both sets of respondents indicated that a direct approach and independent review are important and should always be emphasized. These include: undertaking an independent financial review; informal discussion via fax / telephone; telephone enquiry to confirm expression of interest; site visit(s) to projects in progress and recently completed; evaluation of past experience of performance; and use of company quality evaluation forms. It is worth noting that these reported approaches are different, sometimes contrasting with standard, or recommended practices. More obviously, they are subjective and rely heavily on individual experience and judgement.

## CONTRACTOR EVALUATION

Traditional tenderer evaluation has emphasized tender price; lack of attention has traditionally been afforded evaluation of contractors' attributes. Lowest-price wins practice has great influence over the selection process. Hence, this component outlines the latest trends of clients' preferences i.e. lowest price or PSC during final selection. The final selection criteria i.e. PSC represent an important factor for contractor selection decision-makers to ultimately decide who is the best contractor(s).

**Table 1:** Relative Indices for project-specific criteria

PSC AND Sub-PSC	Public		Private	
	Building	C. E.	Building	C. E.
<b><i>Manpower Resources<sup>1</sup></i></b>	<b><u>0.124</u></b>	<b><u>0.123</u></b>	<b><u>0.128<sup>4</sup></u></b>	<b><u>0.128<sup>5</sup></u></b>
Quality and quantity of human resources	0.261	0.254	0.246	0.238
Quality and quantity of managerial staff	0.258	0.257	0.264	0.269
Amount of decision-making authority on site	0.226	0.242	0.233	0.240
Amount of key personnel for the project	0.255	0.248	0.257	0.253
<b><i>Equipment Resources<sup>1</sup></i></b>	<b><u>0.104<sup>2</sup></u></b>	<b><u>0.106<sup>3</sup></u></b>	<b><u>0.094</u></b>	<b><u>0.097</u></b>
Type of plants and equipment available	0.241	0.255	0.252	0.242
Size of equipment available	0.223	0.221	0.242	0.237
Condition and availability equipment	0.264	0.259	0.240	0.242
Suitability of the equipment	0.272	0.266	0.267	0.278
<b><i>Project Management Capabilities<sup>1</sup></i></b>	<b><u>0.111</u></b>	<b><u>0.116</u></b>	<b><u>0.117<sup>4</sup></u></b>	<b><u>0.117<sup>5</sup></u></b>
Number of professional personnel available	0.207	0.208	0.194	0.188
Type of project control and monitoring procedures	0.212	0.210	0.220	0.229
Availability of project management software	0.144	0.146	0.150	0.160
Cost control and reporting systems	0.200	0.189	0.194	0.191
Ability to deal with unanticipated problems	0.237	0.247	0.242	0.232
<b><i>Geographical Familiarities<sup>1</sup></i></b>	<b><u>0.091</u></b>	<b><u>0.090</u></b>	<b><u>0.095<sup>4</sup></u></b>	<b><u>0.096<sup>5</sup></u></b>
Contractor's familiarity with weather conditions	0.165	0.176	0.167	0.191
Contractor's familiarity with local labour	0.192	0.212	0.208	0.212
Contractor's familiarity with local suppliers	0.185	0.199	0.218	0.207
Contractor's familiarity with geographic area	0.194	0.182	0.195	0.191
Relationship with Local Authority	0.264	0.231	0.212	0.199
<b><i>Location of Home Office<sup>1</sup></i></b>	<b><u>0.078</u></b>	<b><u>0.075</u></b>	<b><u>0.084<sup>4</sup></u></b>	<b><u>0.097<sup>5</sup></u></b>
Home office location relative to job site location	0.448	0.432	0.508	0.495
Communication and transportation- office to job site	0.552	0.568	0.492	0.505
<b><i>Capacity<sup>1</sup></i></b>	<b><u>0.129<sup>2</sup></u></b>	<b><u>0.133<sup>3</sup></u></b>	<b><u>0.120</u></b>	<b><u>0.119</u></b>
Current workload	0.312	0.312	0.329	0.330
Maximum resource/financial capacity	0.352	0.357	0.355	0.346
Finance arrangements	0.336	0.331	0.316	0.324
<b><i>Project Execution to the Proposed Project<sup>1</sup></i></b>	<b><u>0.120<sup>2</sup></u></b>	<b><u>0.119<sup>3</sup></u></b>	<b><u>0.116</u></b>	<b><u>0.116</u></b>
Training or skill level of craftsmen	0.276	0.284	0.259	0.256
Productivity improvement procedures and awareness	0.222	0.203	0.228	0.214
Site organization, rules and policies (Health and Safety)	0.284	0.277	0.265	0.274
Engineering co-ordination	0.217	0.236	0.248	0.256
<b><i>Technical-economic Analysis<sup>1</sup></i></b>	<b><u>0.112</u></b>	<b><u>0.107</u></b>	<b><u>0.112</u></b>	<b><u>0.108<sup>5</sup></u></b>
Comparison of client's estimate with tender price	0.227	0.255	0.229	0.217
Comparison between proposal and average tender prices	0.183	0.175	0.200	0.184
Comparison for client's and proposed direct cost	0.201	0.192	0.201	0.195
Contractor's errors- proposed construction method etc	0.198	0.200	0.192	0.206
Proposals review- cost/time/resources schedule	0.190	0.178	0.177	0.197
<b><i>Other project-specific criteria<sup>1</sup></i></b>	<b><u>0.132</u></b>	<b><u>0.131<sup>3</sup></u></b>	<b><u>0.134<sup>4</sup></u></b>	<b><u>0.124</u></b>
Actual quality achieved to the similar works	0.200	0.198	0.203	0.203
Experience with specific type of facility	0.189	0.194	0.190	0.196
Proposed construction method	0.193	0.196	0.189	0.190
Ability to complete on time	0.230	0.225	0.217	0.219
Actual schedule achieved on similar works	0.188	0.187	0.201	0.193

<sup>1</sup>Main-PSC; Spearman Correlation Coefficient,  $r_B=0.92$  and  $r_C=0.89$ ,  $P<0.01$  level (2-tailed).

<sup>2</sup>Relative Indices ranked higher than private clients' building work.

<sup>3</sup>Relative Indices ranked higher than private clients' civil engineering works.

<sup>4</sup>Relative Indices ranked higher than public clients' building work.

<sup>5</sup>Relative Indices ranked higher than public clients' civil engineering works.

**Table 2:** General overview of clients' preferences in tender evaluation

	Clients' final selection options:			
	(A) <i>Tender price</i>	(B) <i>Tender price more important than PSC</i>	(C) <i>Tender price and PSC equally important</i>	(D) <i>No Comment</i>
<b>Public Clients</b>				
Building	4	31	11	5
Civil Engineering Works	0	17	4	1
Other Construction Works	0	12	5	1
<i>Totals:</i>	4 (4%)	60 (66%)	20 (22%)	7 (8%)
<b>Private Clients</b>				
Building	2	20	12	1
Civil Engineering Works	0	11	4	0
Other Construction Works	0	9	5	1
<i>Totals:</i>	2 (3%)	40 (62%)	21 (32%)	2 (3%)

There are nine main criteria groupings of PSC found to be in favour with building and civil engineering works. Under these, are thirty-seven sub-PSC. Each sub-criterion carries a partial decision-making weight towards the main criteria. On a Likert style scale the extent of level of importance for each PSC was assigned, where 1 is no importance and 5 is very important according to their past two years experiences for a given types projects. Using the RI technique (Holt 1997) each sub-criterion and main PSC groupings were derived a RI from 0.0 to 1.0 according to the level of importance given. Where 0.0 is no importance and 1.0 very important. Table 1 shows aggregated RI for both main PSC groupings and sub-criteria. The results show that use of these PSC in public and private samples is very close. Clients' preferences for these main-PSC show significant correlation between public / private building works and public / private civil engineering works. (Spearman Correlation Coefficient  $r_B = 0.92$  and  $r_C = 0.89$ ,  $P < 0.01$ , 2-tailed).

The RIs in Table 1 show the relationship of main-PSC use in the building and civil engineering works. It was found that: equipment resources; capacity; and project execution to the proposed project are ranked higher than private projects. However, main-PSC in private building and civil engineering works such as: manpower resources; project management capabilities; geographical familiarities and location of home office are ranked higher than public projects. One possible explanation is that, public and private clients tend to have similar PSC and assign equal level of importance in both building and civil engineering works.

Clients' opinions of lowest price practice were also investigated. 66% of public clients and 62% of private clients chose *Option-B* (i.e. tender price more important than PSC) (Table 2). Comments from both public and private respondents choosing *Option-B* indicated that they assigned more than 60% of importance on lowest-price and a maximum of 30% importance on PSC. It appears that final selection is still influenced by tender price, even though consideration of PSC is given in many cases.

22% of public and 32% of private clients reported that they assigned tender price and PSC of equal importance i.e. *Option-C*. Use of PSC in the private sector was slightly stronger than within the public sector. Perhaps in this respect public clients are most often restricted to select the lowest-price tender due to public accountability. *Option-A* (i.e. lowest-price wins) was found to have least favour. There were only 4% and 3% public and private respondents respectively, who based final selection on tender price

alone. This indicated that the lowest-price wins principle was far from the best-perceived option when compared to *Options-B* and *C*. No respondents in respect of civil engineering and other construction projects reported that a contract was awarded to contractors based on lowest-price wins alone. This indicated that more strict and close scrutiny is applied as the nature of work differs. This may be attributed to the use of different types of procurement for these different work types.

## CONCLUSION

Contrary to the commonly held view that public clients tend to adopt standard practices during the pre-qualification process, most prefer to have a system based upon their self-developed database, or their experience. This pertains despite increased urges for a single and central UK pre-qualification system (Latham 1994, Holt *et al.* 1995b).

It is also interesting to note that most clients show a substantial amount of confidence in their self-developed systems, which rely heavily on past experience, and individual knowledge of the particular works. Such confidence has inevitably encouraged the continuing application of ad-hoc practice(s). On the other hand, respondents also highlighted factors that have a negative impact on their willingness to use national, standard lists. These factors may be summarized as: lack of flexibility; lack of tolerance to clients' specific requirements such as consideration of clients' preferences, geographical concerns, project-specific requirements; and long term confidence attributed to self-developed database / contractors lists. Such fragmented practices bring both positive and negative effects to the industry. On the positive side, it provides flexibility, which allows construction clients to deal with variable workloads. On the negative side, it inhibits standardization and broad dissemination of good practice for better performance.

Use of pre-qualification lists in the UK construction industry is eminently flexible. Findings from this survey reveal that a majority of clients advocate self-developed databases and selection methods, and a standing list of approved contractors. Others are adopting standard, good practices (except for EU Works Directives and some major projects).

Comparison of PSC perceptions exhibits strong correlation between public and private clients, and for both building and civil engineering type works. These common criteria show potential for developing a standard set of contractor evaluation criteria. In summary, these observed PSC are vitally important, in defining good and not so good contractors' attributes, to facilitate development of contractor classification built on the most prudent selection criteria model(s). Such model(s) will inevitably lighten the selection burden for both clients and contractors, and increase objective evaluation during the tendering process.

Findings from investigation into the use of PSC and / or the lowest-price wins principle during evaluation of tendering contractors, reveals that the industry is moving to a multi-criteria approach. This shows that choice of contractor is being made on a value rather than lowest-price judgement and is therefore in harmony with the aspirations of CIRIA (1998). The Construction Industry Council (1994), Latham (1995) and EUCO (1995) have also advocated this concept.

In sum, the overall findings mainly concerned with clients' selection opinions and preferences. It provides refinement to any decision-making process, or in aiding to qualitative and quantitative contractor selection and evaluation procedures.

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## APPENDIX

### Public clients

“It covered *too many* contractors in a *nation wide approach*”



“Too many *national large* contractors, which is not suitable for *small* and *one off* projects.”

“Does not include local contractors, who can *respond quickly* to the tendering process.”

“Most of our contracts are relatively *small* and *local*.” “For small contracts, we *prefer* local contractors.”

“It is not meaningful to the *specific area*, such as local authority *geographical area*.”

“It is *council's policy* to form its own list of approved contractors.”

“We would wish to gather our *own data* at the pre-qualification stage for the pre-qualification process.”

“It is *not* for local contracts.” “We would rather compile our *own* contractors list.”

“We work on a *term maintenance contract*, we prefer to use our own system which is more suitable for *local contractors* even though we have National Sub-contractors on our list.”

“Our council prefer to use contractors from *local area* for the majority of projects.”

### **Private clients**

“Many of our projects are *specific* and *unique*, and also in a *remote location*.”

“We are *not aware* of these standard practices.”

“It is *not meaningful* to the specific area, majority of our clients are housing associations.”

“We do consider *project-specific basis* only.”

“It is *not suitable* for us, we run school, local housing repair and maintenance works.”

“Our own *National Contractors* list is more closely related to our requirements.”

“We have the tender list *compiled specifically* to specific projects.”

“We tend to use *known package contractors* who have a prior relationship over the past few contracts.”

“We insist on *our* approved list.”

“Have *not* used these standard practices before.”