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Critical Attributes for Selecting Contractors for Long-term Collaborative Relationships

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The construction industry is increasingly embracing long-term collaborative relationships for project delivery. Since it is not all contractors that are suitable for collaboration and long-term relationships, and most clients are familiar with traditional practices of selecting contractors, there is need for an understanding on the critical attributes to consider in selecting contractors for long-term collaborative relationship contracts. The aim of this study is to determine the appropriate attributes required of contractors to successfully perform in long-term collaborative relationship contracts. The qualitative research methodology was adopted in this study, consisting of multiple case studies of organisations employing framework contracts in South Africa. Data for the study were collected via semi-structured interviews with 16 key informants of eight purposively selected organisations. The data were analysed with the aid of Nvivo 11 qualitative data analysis software utilising thematic qualitative data analysis techniques and presented using word clouds and direct quotes from key informants. The findings indicate that the critical attributes to consider when selecting contractors for long-term collaborative relationships are: team working attribute, commitment, innovativeness, and attributes relating to the behaviour and attitude of the contractors, such as openness, honesty, trust, transparency, ethical and being realistic. These critical attributes are add-ons to other general attributes (such as technical capacity, experience, and price) for contractor selection which are already sufficiently articulated in literature. The study result provides knowledge that can aid better decision making in selecting appropriate contractor for long-term collaborative relationship contracts in the construction Industry.

Keywords: Collaboration, Contractor Selection, Critical Attributes, Long-term Relationships
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INTRODUCTION

Contractor selection is described as the process by which individuals or firms are identified, evaluated, and contracted with, to provide certain goods or services (Beil, 2010). The outcome of such process is to enable the selection of the right contractor that will deliver the expected project outcome. According to Pal *et al* (2013) the main objectives of contractor selection process is to reduce purchase risk, maximize overall value to the clients, and develop closeness and long-term relationships with contractors. Appropriate contractor selection plays a vital role in overall project performance in the construction industry (El-Sayegh *et al*., 2019; Martin *et al*., 2018; Ebrahimi *et al*., 2016; Palaneeswaran and Kumaraswamy, 2000). This is partly because of contractor's responsibility to manage and utilize project resources (labour and materials) (Kog and Yaman, 2014) and

also as a result of the significant role contractors play in promoting good project management and creating enabling environment for achieving expected project outcomes (Skeggs, 2003).

The dominant criteria employed in traditional short-term contracts which involves the evaluation of written and oral submissions by considering more of hard attributes such as time, price, quality and resources (Dewberry *et al*., 2018) are well covered in the literature (see for example: Nasab and Ghamsarian, 2015; Ebrahimi *et al*., 2016; San Cristóbal 2011; Favié *et al*., 2007). El-Sayegh *et al* (2019) in their research on key selection criteria for green construction projects in the UAE, established the need to select contractors that have certain additional attributes for green construction projects. Therefore, giving the increasing adoption of collaboration and long-term relationship practices in construction, more understanding on the critical success attributes to consider in selecting contractors for long-term collaborative relationship contracts is needed through an empirical study.

RELATED LITERATURE

The Evolution of Collaboration and Long-term Relationships in Construction

There is increasing interest in collaboration and long-term relationships in the construction industry. The influence of the Latham (1994) "constructing the team" and Egan (1998) "rethinking construction", UK construction industry reports, together with other construction industry reports from Hong Kong, New Zealand, and Singapore are attributed to have influenced the rising trend of collaboration and long-term relationship practices in the construction industry (Donohoe and Coggins 2016).

Collaboration and long-term relationships practices are becoming more adopted in the construction industry globally, owing to their success in the manufacturing and service sectors, where the strategy is seen as a vehicle to maximise value, levels of quality, and service delivery (Khalfan *et al*., 2014; Meng, 2013; Frödell, 2011). Therefore, collaboration and long-term relationship practices has been shown to be mutually beneficial to both clients and contractors when adopted for project delivery. This involves an arrangement that brings together the concept of collaboration and long-term relationships. Thereby creating a different situation from what is sought in the traditional contracting practice of one-tender-per-project approach, where the client enters into a contractual agreement and assembles a separate supply chain for each project, with short-term relationships, and a consequent concentration of knowledge within the design team only (Watermeyer, 2012).

However, some clients do not see it as a promising strategy, particularly during economic meltdown and recessions (Donohoe and Coggins, 2016; Challender *et al*., 2014; Meng, 2013). Sanchez (2012) and Saad *et al*. (2002) reported that collaboration and long-term relationships approaches require a longer time, more effort, more resources, and commitment to develop. In addition, due to power dynamics resulting from the dominance of some clients in the approach, some contractors do not embrace the approach in contract relationships (Rinkus *et al*., 2016; Chicksand, 2015). Furthermore, issues around contractors becoming complacent, and the inability to prosecute rights under such contracts, have been raised (Palaneeswaran *et al*., 2003; Black *et al*., 2000). These issues suggest a limited understanding of the concept of collaboration and long-term relationships practices, and a tendency to view such strategies through the lens of traditional procurement practices. Nevertheless, the nature of collaboration in programme alliances in Australia is reported to have triggered a number of very good outcomes, such as innovation, learning across projects and teams as well as improved safety (Walker *et al*., 2018).

Contractors Selection

To obtain a project, clients will require and select entities with specific characteristics to undertake the various activities in a procurement process. Contractor selection is a process of identifying the most suitable contractor for a project from a pool of available and interested contractors (Elsayah, 2016). Contractor selection process is becoming more important and complicated (De Boer *et al*., 2001). This is attributed to the influence of globalisation with the internet enabling the increase of choices, changing customer preferences for broader and faster supplier selection processes (such as e-procurement), and government regulations, especially for public clients where transparency and other accountability requirements are demanded *(ibid).* In the construction industry, in addition to the complexity in the broad contractor selection process because of the influence of globalisation and other factors stated earlier, the increasing advocacy for long-term relationships and collaborative contracts, contractor selection in construction is argued to be more complicated (Dewberry et al., 2018). Therefore, the selection process of a suitable contractor for a construction project is regarded as a critical exercise to avoid adverse effects of inappropriate contractor selection. Such adverse effects may include schedule delays, project overruns, low quality works, large number of claims and litigation, suffering of workers and need for more client supervision of clients.

RESEARCH METHOD

The qualitative research methodology was adopted in this study. Organisations employing framework contracts which internalises long-term collaborative relationships were identified via purposive sampling for data collection. Data was collected by means of key informant interviews. The purposively selected organisations were specifically requested to identify key informants within their organisation with experience and participation in the contractor selection process of their framework contracts, and who are in the position to give insights on the appropriate attributes required of contractors to successfully perform in long-term collaborative relationship contracts. Key informant interviews involve interviewing people who are selected for their first-hand knowledge about a topic of interest and are likely to provide needed information, ideas, and insights on the topic of interest (Kumar, 1989). The ability of key informants to provide deeper information and more insights on a topic of interest is as a result of their personal skills, or position within a society (Karkee et al., 2021). Key informant interview is suitable for collecting data that are difficult or time consuming to collect through structured techniques such as questionnaire surveys *(ibid).* Therefore, the technique is purely a qualitative interview, which is consistent with the research choice of research methodology. The key informant interviews were carried out following Kumar's (1989) guide for conducting key informant interviews in developing countries.

The interviews were semi-structured and were done face-to-face. Saunders et al. (2016) reported that the use of face-to-face semi-structured interviews could ensure the collection of valid and reliable data. Semi-structured interviews provide the advantage of enabling direct collection of data from respondents in a face-to-face encounter. The interviews were used to help capture the narrative detailed knowledge of how the selection of a contractor for framework contract takes place, in order to understand the appropriate attributes required of contractors to successfully perform in long-term collaborative relationship contracts.

The data collection and analysis was carried out simultaneously to assure that all the expected information was being captured from the interviews and to confirm if there was a need for follow-up interviews or correction of the interview instrument for subsequent interviews. The practice also enabled the determination of the point of

saturation when no new information was being uncovered from the interviews, through comparing the new information with earlier data. The analysis aimed at gaining evidence as much as possible to identify the critical attributes required of contractors for long-term collaborative relationships contracts.

The audio record from the key informant interviews was transcribed verbatim. The data collected from the key informant interviews were analysed with the aid of the Nvivo 11 pro qualitative data analysis software for windows and following thematic qualitative data analysis methodology outlined by Miles, Huberman and Saldana (2014). Thematic analysis was carried out on the interviewed data employing an abductive approach to discover and develop emergent themes by identifying similar language and codes arising from the cases. The findings from each case were then cross analysed to compare the findings from all case studies. The result of the qualitative analysis of the data collected was presented using word cloud (Figure 1) resulting from the word frequency query of the emerging themes from the framework matrix carried out with the aid of Nvivo 11 pro qualitative data analysis software. The word cloud provides a synopsis of the main themes and a sense of the emerging pattern within the set of data. Also, supporting direct quotes from the key informants (consent was obtained to use key informants' direct quotes) was used in reporting the data of the study.

Effectiveness of Word Cloud for Data Presentation

The use of a word cloud as a method of presenting and analysing data is a field still under-explored (Seyfert & Viola, 2017). The effectiveness and validity of the adoption of a word cloud for data presentation and analysis in this study stems from the precedence of its use in the following studies: Firstly, in a study that explored the usefulness of word clouds for general text analysis tasks, to show how word clouds can be effective in solving analysis tasks and evaluation in a qualitative study, by Heimerl et al. (2014). The findings indicate that a word cloud has the potential in text analytics and is indeed an effective tool for text analysis. However, the ability to refer back to the actual text source was considered critical in its use.

Secondly, a study by McNaught and Lam (2010) sought to find out if the word-cloud strategy could be a potentially useful method for qualitative analysis of text. The findings indicated that word clouds can be a useful research tool to aid educational research, allowing researchers to quickly visualise some general patterns and common themes in text data. They also reported that a word cloud is a useful tool for preliminary analysis, for finding out differences between sets of responses and for validation of previous findings.

Finally, in using word clouds for research analysis in 2016, Atenstaedt (2017) shows that the technique largely fulfilled the aim for its use in ensuring that priority is given to research articles of direct relevance to patient care for family practitioners and primary care researchers.

FINDINGS AND DISCUSSION

Critical Attributes Required of Contractors for Long-term Collaborative Relationships Contracts

The summary details of the prominent words representing the critical attributes required of contractors for successful performance in framework contracts, given the demand for a long-term collaborative relationship are presented in Figure 1.

By carrying out a text run on the prominent words across the data displayed the following are identified as the critical attributes for long-term collaborative relationships: team working, commitment, innovativeness, attitudes which consist of openness, honesty, trust, transparent and ethical. Others are good communication; being proactive, good leadership, being sacrificial and realistic.

Figure 1: Word Cloud Depicting Prominent Words on Critical Attributes Required of Contractors for long-term collaborative relationships Contracts

According to Spekman (1988), it is impossible to list all required criteria in a contractor selection process. Thus, the list is not intended to be exhaustive, but to represent a range of concerns to attend to when selecting contractors for long-term collaborative relationships. These critical attributes are discussed below using supporting direct quotations from the key informants of the organisations investigated.

Team Working Attribute

The team working spirit of contractors is observed as the most significant attribute reported from the findings to be given consideration in the contractor selection process for long-term collaborative relationships. This attribute was reported having a word count of 14. This shows that virtually all the key informants agreed and mentioned the team working attribute as an appropriate attribute required for long-term collaborative relationships. To quote from the key informants interview transcript:

> "The ability to work as a team, we are now one team and that's the key thing. We join the party as equals. Contractor needs to be actively involved at the early stage of the project because is not your contractor anymore, he's your construction specialist partner, so you've got to bring him to the table and you've got to give him seat and a voice at the table. He's not just your builder; he's part of the professional team." -**Alpha 1**

According to Alpha 7, the team working spirit of the contractor is critical to working collaboratively with contractors in

framework contracts. This is in contrast to adversarial relationships in normal contracts with clients and consultants on one side and contractors on the other side.

Commitment Attribute

The commitment of contractors to the demands of a long-term collaborative relationship is another significant attribute to consider in the contractor selection process for long-term collaborative relationships from the findings. The summary details of the cross analysis result across the eight cases shows the commitment attribute with a word count of 12 and weighted percentage of 1.91, indicating that most of the key informants suggested the attribute as a requirement for long-term collaborative relationships. Alpha 1 well illustrates the relevance of this attribute thus:

> "Commitment, you've got to commit to this, you can't do it half-heartedly. What you have to be careful about with the framework contract is the contractor's complacency. Because they get a three-year contract and they think all the work that Alpha 1 has is ours and we don't have to worry about doing our best or working hard anymore because we are going to get it anyway so you have to make sure that they understand that it's not a blank check and are committed to it." - **Alpha 1**

Commitment of contractor is also linked to the willingness and availability of the contractor for long-term collaborative relationships. Factors such as being sacrificial in not making a claim for every activity as well as providing discounts, number of jobs at hand and number of other framework contracts contractors are participating in are given consideration.

Innovativeness Attribute

Azadegan *et al*. (2008) suggest that clients depend on the innovativeness of suppliers to improve the cost, quality, timeliness of their product. Concurring, the innovative characteristics of a contractor are reported by the organisations via their key informants as an important attribute to consider in the contractor selection process for long-term collaborative relationships with a word count of 12. To quote from the key informants interview transcript:

> "It should be someone who is innovative, that can think a little bit out of the box with you and add value to the process." -**Alpha 1**
>
> "it should be Someone that is innovative, for example if there are innovative ideas out there that we can use which may result in to a saving to assist us to reduce the cost, someone that will assist us to get the most technically superior of being without paying more than we should." -**Alpha 8**

It is evident that in framework contracts, for long-term collaborative relationships, clients expect contractors that will come up with something new or possible solutions that will have a positive impact on cost, quality and time functions of the projects, rather than contractors that will only do what they are told to do, as is the practice in a normal contract.

Attitude Attribute

Virtually all the organisations emphasised aspects of attitudinal attributes as being vital traits with high influence on long-term collaborative relationships. Attitude of contractors which comprises contractor's honesty and transparency attitudes, respectfulness attitude, right culture and ethical behaviours are crucially important requirements for long-term collaborative relationships with contractors and should be given consideration in the contractor selection process in framework contracts. These attitudinal attributes were also suggested to have influence on the level of trust between the parties on the projects (Alpha2). The need for the contractor to be honest, open and transparent even when going through difficulties on the projects was emphasised to be of paramount

importance by most of the organisations. To use the words of Alpha 1:

> "Need to be honest and realistic; People should walk away from jobs before burning their reputations. There's always another job, rather walk away from a job where you are going to over promise and under-deliver." -**Alpha 1**

These attributes also ensure that contractors are open to clients when there are saving opportunities rather than hiding within the contract clause and behaving opportunistically.

With regards to the respectful attribute, this attribute does not only concern respect for one another but also includes respect for client's funds and other resources by avoiding wastages (Alpha 1). The emphasis with regards to the ethical attributes relate to the state of being responsible by way of moral and legal accountability, compliance with codes of conduct and government regulations **(Alpha 4**).

Communication Attribute

Good communication attribute of contractors was also found to have a positive influence on long-term collaborative relationships with contractors from the findings. To quote from the key informants interview transcript:

> "Open and honest communication is needed also, when there is a problem, put up your hand and say we need to talk; we get around the table and sort it out." **Alpha 3**

Since communication is two ways, clients also have to articulate their objectives to enable proper signalling from contractors on their suitability in keeping with the propositions of signalling theory (Zahavi, 1975).

Proactive Attribute

Being proactive is also an important attribute impacting long-term collaborative relationships from the findings across the data. In long-term collaborative relationships, contractors are expected to be to be proactive rather than reactive to situations and have an eye for contingency plans **(Alpha 7, Alpha 4).** This is different from the practices in normal contracts where contractors mostly react to situations with associated claims and cost escalations.

From the foregoing, the appropriate attributes suggested from the observations, for selecting contractors in framework contracts given the demand for long-term collaborative relationships are based on soft abstract attributes which are qualitative in nature rather than quantifiable, such as cost, time and quality, which are mostly the attributes considered in a normal contract. Similarly, many studies have reported various soft attributes as requirements for long-term collaborative relationships (Ayegba *et al*., 2018).

CONCLUSION

In this study, the critical attributes to consider in selecting construction contractors for long-term collaborative relationships was empirically investigated. The knowledge of these critical attributes will significantly support appropriate contractor selection for long-term collaborative relationships. The team working attribute, commitment attribute, innovativeness attribute, and attributes relating to the behaviour and attitude of the contractors, such as openness, honesty, trust, transparency, ethical and being realistic were reported as the critical attributes to consider in selecting construction contractors for long-term collaborative relationships. These critical attributes are to be given important consideration when selecting contractors for long-term collaborative relationships in conjunction with other generic criteria such as the technical capacity, experience, price and location which are already sufficiently articulated in the literature.

The study result represents a significant contribution to knowledge and understanding that are useful in: identifying required appropriate attributes to consider in selecting contractors for long-term

collaborative contracts. This will support realistic evaluation, and better decision making in the contractor selection process. Thereby avoiding/reducing the risk of inappropriate contractor selection for long-term collaborative relationships.

Furthermore, the knowledge resulting from this study could be used by contractors to develop their capacity in order to be successful for selection for long-term collaborative relationships contracts. Also, the result from the study is informative to support the development of appropriate models for selecting contractors that will maximise long-term collaborative relationships and models for long-term collaborative relationship practices.

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