This is the published version:


Available from Deakin Research Online:

http://hdl.handle.net/10536/DRO/DU:30051276

Reproduced with the kind permission of the copyright owner.

Copyright: 2013, Research Publishing Services
THE FACTORS THAT AFFECT THE COST ESTIMATION ACTIVITIES IN
THE TENDER PREPARATION PROCESS IN
THE MALAYSIAN CONSTRUCTION INDUSTRY

Normila Ahmad and N. Y. Osman-Schlegel

School of Architecture and Building, Deakin University, Geelong, Australa
E-mail: *natma@deakin.edu.au, *linda.osman@deakin.edu.au

The possibility of winning the tender is subject to the cost estimation proposed by the contractors compared to the cost estimation prepared by the client’s representative. Studies indicated that one of the construction company failures in the tendering process is due to the uncertain, incorrect, and unrealistic cost estimation. Failure to provide a competitive cost estimation on time is the main reason the contractor is not successful in winning the tender, and will not be considered for the tender evaluation stage. The aim of this paper is to validate the key factors that affect the cost estimation activities in the tender preparation process. This paper describes the results of a pilot study, from a questionnaire survey on the factors that affect the cost estimation activities in the tender preparation process. The study shows the importance of all the factors in the cost estimation activities in the tender preparation process in terms of human factors, working culture, and information technology.

Keywords: Cost estimation, Cost estimation accuracy, Contractor, The malaysian construction industry, Tender preparation process, Pilot study.

1. Introduction

In the 20th century, the ability of the contractors to win a project is more challenging with the policy of the borderless world. It is argued that, the construction companies need to compete with not only their colleagues in the same environment (Jaafar, Ramayah and Zainal, 2006), but with other construction companies around the world (Oo, Drew and Lo, 2007).

Studies indicate that one of the failures in the tendering process is due to the uncertain, incorrect, and unrealistic cost estimation. Failure to provide a competitive cost estimation on time is the main reason the contractor is not successful in winning the tender, and will not be considered for the tender evaluation stage. Previous researchers criticized that the cost estimation activities in the tendering process are considered “questionable” (Skitmore and Wilcock, 1994), “outdated” (Ling and Boc, 2001; Albinu and Pasco, 2008), and “a difficult task” (Doloj, 2010). The rationale behind those arguments is associated with the ability of the contractor’s quantity surveyor (Q5) in preparing the cost estimation. It is crucial for the quantity surveyor (Q5) to comprehend the whole process of construction rather than to examine only the finished product. In addition, because of the high demand of the parties involved in the construction industry, as well as the complexity of the project, the construction companies have to be responsive to the misjudgement in preparing the cost estimation.

The aim of this paper is to validate the key factors that affect the cost estimation activities in the tender preparation process obtained from the literature review. This paper describes the results of a pilot study from questionnaire surveys on the factors that affect the cost estimation activities in the tender preparation process. The objectives of this pilot study are:

(i) To ensure the instructions, questions and scale items in the questionnaire are clear and provide understanding to the respondents.

Research, Development, and Practice in Structural Engineering and Construction
Edited by Vanisorn Vimonnit, Amarjit Singh, and Siamak Yazdani
Copyright © 2013 by Research Publishing Services :: www.rpsonline.com.sg

997
To validate the key factors that influence the cost estimation activities in the tender preparation process obtained from the literature review.

2. Factors Affecting Accuracy of Cost Estimation

The interest of researchers in relation to the cost estimation has started in the early 1980's (Dolo, 2010). Flanagan and Norman (1983), Morrison (1984), Mudd (1984), Akintoye and Skitmore (1992), Lowe and Skitmore (1994), and Skitmore and Wilcock (1994), are among the earliest researchers who conducted several studies on cost estimation in the construction industry. Even so, cost estimation accuracy in construction industry are still quite popular (Skitmore and Drew, 2003).

In Australia, Dolo (2010) examined the overrun cost of the construction project by understanding the stakeholders’ perspective in the cost estimation process for the whole project life cycle. He revealed that the factors that influence cost estimation in engineering projects could be classified into five major categories, which are: political; economic; financial; technical; and attitudinal concerns.

Enshassi, Mohamed and Madi (2005), observed the main factors that have an effect on accuracy of cost estimation of building contracts in the Gaza Strip. They summarized the main factors that have some influence on the accuracy of cost estimation are grouped as location of the project, segmentation of the Gaza strip and limitation of movements between areas, political situation, and financial status of the owner. Akintoye and Fitzgerald (2000), have identified that the inaccuracy of the tender preparation process are due to the lack of the estimator’s practical knowledge, insufficient time given to prepare the costing, poor tender documentation and various subcontractors’ price in relation to quotation. Babalola and Adesanya (2008), investigated the factors that influence cost estimation activities for electrical services projects in Nigeria. The finding of their survey shows that the factors affecting production of cost estimation for electrical services in Nigeria are grouped into four principal factors, which are: estimator competence; project technicality; economic requirements; and contract requirements.

3. Pilot Study

The overall strategy of this study is based on a comprehensive review of relevant literature of a contractor’s performance in general, and cost estimation in particular. This pilot study consists of twelve face-to-face semi-structured interviews and twenty respondents of a questionnaire survey. This will be the basis for the actual study on the next stage.

3.1. Identification of Key Factors

Based on a comprehensive review of relevant literature, the list of factors that affect a contractor’s cost estimation activities in the tender preparation process was compiled for this study. Twenty-five factors were listed and have been grouped into three major sets, which are:

1) Human factors and working culture,
2) Human factors and information technology,
3) Working culture and information technology factors.

These key factors were combined together with the data gathered from the face-to-face semi-structured interview to develop a questionnaire (survey).

3.2. Face-to-Face Semi-Structured Interviews

In the data collection process, twelve construction companies have been identified as potential participants in this study to confirm the list of factors gathered from the literature review. In the Malaysian construction industry, construction companies are classified according to their capacity to
undertake construction projects based on project value and are categorized into large (grade G7 registration), medium (grade G4, G5 and G6 registration) and small (grade G1, G2 and G3 registration). However, this study is focused on medium and large size enterprises only.

A semi-structured, face-to-face interview was conducted with the technical staff from different registration grades and positions such as project director, project manager, quantity surveyor, project engineer, etc. The participants were asked to express their opinion on the current cost estimation activities in the tender preparation process and were given the list of twenty-five factors listed. All participants agreed with the listed factors. Although they did not propose any new factors, they did provide valuable comments on the scope and language (Yang et al., 2010). For example, the first group was changed from “Human resources and working culture factors” to a more suitable phrase “Human factors and working culture”. These comments were useful for questionnaire development since they promote a description of the factors for better comprehension (Yang et al., 2010).

3.3. Questionnaire Survey

The questionnaire (survey) is undertaken to determine the opinion of participants regarding the current cost estimation activities and the contractor’s performance in the tender preparation process. Questions relating to the perception, experiences and opinions of the technical staff in the tender preparation process will be the key-stone of the questionnaire. In this pilot survey, the target respondents are the QS/estimator, engineer, architect, project director/manager, or director/principal who is working in the Malaysian construction organization. It was distributed to the respondents through electronic mail (e-mail), mail, and by hand. The firms were randomly selected from the list of Construction Industry Development Board (CIDB) Malaysia directory. Only twenty target respondents were involved in this questionnaire (survey).

This survey form was developed from the variables identified in the data collection process to validate the key factors that affect the cost estimation activities in the tender preparation process obtained from the literature review. The questionnaire design was based on the combination of an extensive review of the literature, and face-to-face semi-structured interview in this study area. It was divided into two sections, which are: Section 1; and Section 2. In Part A, Section 1, participants are required to answer nine questions. These include their highest qualifications, experience in the construction industry, position in organization, type of firm, which they are employed, number of years the organization has been active, number of projects executed in five years, value of executed projects, percentage of projects obtained and cost estimation issues in the tendering process.

Section 2 consists of two parts. In Part B, the questionnaire rated their level of agreement according to a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. In Part C, the level of agreement ranked from 1 = strongly unimportant to 5 = strongly important.

Even though the pilot study dealt with various issues relating to current cost estimation activities in the Malaysian construction industry, this paper only focuses on one section of the questionnaire, which is Section 2 - Part C. The section is listed with the factors influencing the cost estimation activities in the tender preparation process for the respondents to rate. All respondents completed and returned the questionnaire.

4. Data Analysis and Results

The data from the questionnaire (survey) were analyzed using Predictive Analytics Software or PASW (formerly known as Statistical Package for Social Science (SPSS)). The internal consistency of subscales was examined using Cronbach’s