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# Construction Tender Pricing Strategies in Traditional Procurement System

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**Abstract.** The fundamental activities carried out by a contractor are estimating and submitting pricing proposal, therefore contractors are required to make decision during pricing of Bills of Quantities (BQ) regarding the most suitable pricing strategies to be applied. Despite numerous of study has been carried out to identify effective pricing strategies to allow competitive pricing, contractor choose no strategies but relied on their instinct and feeling. This study is conducted to identify the current pricing strategies used by contractors and to determine the internal and external variables in making pricing strategies decision. Target respondents for this study are estimator in Grade 7 contractors. Semi-structure interviews and content analysis method is used to analyse the obtained data. The findings show that the tender pricing strategies adopted are cost based pricing, hybrid pricing and the combination of cost based and historical price based strategies. On the other hand, top management decision and company strength and weaknesses are the two internal variables in making pricing decision. Besides, the external variables in selection of pricing strategies is owner's characteristics. Conclusively, this study can enhance the understandings on tender pricing strategies and outline the viable alternatives way to have a better position in project bidding.

## 1. Introduction

Two main activities carried out by contractor during selection phase are planning and developing preliminary project programme, as well as preparing price tender. Price tender should cater for expenditure on workers, materials, equipment, subcontractors, overhead and profit (Bennett, 2003). For a long time, construction client tends to select contractor based on lowest bid (Hasnain & Thaheem, 2016).

In construction tender, contractors should make decision regarding most suitable pricing strategies to be applied during pricing of BQ. Fayek (1998) and Moselhi et al. (1993) cited that one of the decision made by contractor is to set the margin. Moselhi et al. (1993) added that decision in bidding and markup size are the dilemma encountered by contractor. Hence, it is necessary to form a structured decision-making procedure. In addition to profit and overhead mentioned by Fayek (1998), Moselhi and Moselhi et al. (1993) considered margin size constitutes also contingencies according to the risk correlated in that priced item.



There is a lot of pricing techniques introduced and formulated since 1956 mainly from Friedman (1956), Gates (1967), Ahmad and Minkarah (1987), Carr (1987), Tavakoli and Utomo (1989), Olsen (1990) and others. These theories were generally grouped according to three aspects; probability theory, decision analysis techniques and knowledge-based expert system. Every models have its limitation; models based on probability theory are complicated in nature and only take into account profitability factor without considering qualitative factors. As for models based on decision analysis technique, it does not accommodate new bidding experiences, meanwhile the downside of models based on knowledge-based expert systems is that it is hard to do hypothesis testing Moselhi et al. (1993).

An unhealthy competition situation was created where most of the contractors suffer losses resulted from “lowest bid wins” when more and more tenderers offering lower tender price. Apart from that, since there are tremendous increase in the number of contractors, the level of competition forced contractor to choose either lucrative profit but little possibility of project winning or vice versa (Kim & Reinschmidt, 2010). Occasionally, it can be counterproductive when tender prices that offered are too low and unrealistic which decrease the chance of tender winning (Yuliana et al., 2016). Therefore, contractors need to implement appropriate strategy in bidding (Setiawan et al., 2015) since it is feasible to structuralise this sophisticated circumstances these days (Ahmad & Minkarah, 1988).

In this study, the current pricing strategies used by contractors and its internal and external variable in making pricing strategies decision were identified in order to provide contractor with more choices or methods of pricing that can be applied in tendering to enjoy competitive advantage. These alternatives might also be a solution for contractor estimator who are directly involved in tender pricing process and in the dilemma of securing project or securing profit.

## 2. Literature Review

### 2.1 Bidding Objectives

A contractor may have few objectives to be realised in tendering at once (Fayek, 1998). However, securing project is believed to be the ultimate aim of many contractors. Organisation objectives in tendering affect largely the selection of pricing strategies and determination of mark-up size. The selection criteria of contractor for a project is very subjective and according to client’s preferences. It has been a long time since the selection of contractor is based on the lowest price approach (Hasnain & Thaheem, 2016). Clients of this type are on the belief that quality of work provided by contractor would be similar regardless the price level (Hasnain & Thaheem, 2016).

### 2.2 Tender Pricing Strategies

Most of the study suggested that tender pricing strategies comprise two opposite strategies which are cost based and market based. Yet, Akintoye and Skitmore (1992) has introduced the other two strategies that exist in construction industry namely historical price based and standard rate based pricing strategies. Not only that, hybrid pricing strategies started to gain attention from public when people critique the pure cost based or market based.

The most popular pricing strategies used in construction industry nowadays are cost based pricing strategies (Mochtar & Arditi, 2001). Previous mentioned models from Friedman and Gates are considered as cost based model (Yu et al., 2012). Cost based pricing approach is used when construction firms are profit oriented. Cost based pricing strategies are further divided into cost plus strategies and subcontractor bid based strategies. Meanwhile, market based strategies pay attention to the market demand and price tender by referring other bidders’ price through market research (Mochtar & Arditi, 2004). By mastering the competitors’ pricing pattern concerning the highest and lowest margin as well as competitors’ pricing strategies, one can develop more strategic price than its competitor to obtain that construction project. Apart from studying the behaviour of competitors, market based approach includes pricing of tender based on the customers’ characteristics and preferences.

Nevertheless, the problem of this approach lies on accessibility of market information. Cost based and market based strategies pose problem respectively. Therefore, hybrid pricing strategies as combination of cost and market based strategies tend to make up for the shortcomings. There are two types of hybrid pricing strategies proposed in Mochtar and Arditi (2001)'s findings namely cost-biased and market-biased hybrid strategy. Historical price based strategies refer to the price set in previous tender was adjusted to cater for differences in time, location, quantity and current economic situation (Akintoye, 1991). Lastly, pricing tender by referring to the standard construction rates published by credible organisation is classified as standard rate table based strategies.

### *2.3 Internal Variables Affecting Tender Pricing Decision*

According to the previous study, internal variables for pricing strategies decision are company strengths and weaknesses, objectives and risk attitude. The strengths and weaknesses of the construction firm will affect the selection of pricing strategies. One of the significant strength is the capability of contractor in gathering market information. As the problem of market based pricing strategies lies on the ability to collect market information, market based pricing strategies would be chosen if the company have great marketing intelligence capabilities (Mochtar & Arditi, 2001).

Akintoye and Skitmore (1992) grouped the pricing objectives into two, namely profit maximization and profit satisficing. A firm that employs a standard profit margin which refer as cost based pricing strategies, are actually satisfying the profit instead of maximizing profit (Hall & Hitch, 1951). On the contrary, profit maximizing refers to those firms who concerns about market situation, competition, and willingness of client to pay higher in exchange for a product (Akintoye & Skitmore, 1992).

### *2.4 External Variables Affecting Tender Pricing Decision*

External variables for pricing strategies decision are characteristic of owner, competitors, and project as well as the market demand. This factor affects the selection of pricing strategies especially when the organisation has little knowledge about characteristic of other bidders and client (Mochtar & Arditi, 2001). It is believed that contractor will behave according to the client's preferences. Mochtar and Arditi (2001) found that when contractor has additional information about client's behaviour, the contractor is inclined to select market based approach.

Number of competitors implies the competition level in construction industry. When clients invite numerous contractor into bidding, this may cause contractors to change the strategies in pricing. Market based pricing strategies will be adopted if contractors know the competitors well (Mochtar & Arditi, 2001). Project characteristic deals with the factors such as the size, duration, project cash flow, difficulty and safety (Dulaimi & Shan, 2002). Before pricing the BQ, contractor will consider the size and duration of a project. The higher the market demand, the strategies used in pricing is prone to be market based. In high demand market, the offered price that is not socially accepted will eventually be driven down (Gabor & Granger, 1977). Therefore, the use of market based approach when market has high demand can help contractor penetrate into the existing and new market easily.

## **3. Research Methodology**

This study focuses on the tender pricing strategies used by construction contractor at the moments and variables in making pricing strategies decision. Semi-structured interview were conducted with Grade 7 contractors. Interview form is prepared in accordance to the literature review. According to Creswell (2005), 5 to 25 interviewees are sufficient to achieve research objectives. Thus, total of 7 interviewees were successfully participated in semi-structured interviews in this study. During interview, interviewees were encouraged to share more information by giving examples and clarifications.

Method of analysing data in this study was contents analysis method. Contents or data obtained from the interview were analysed by understanding the contents, extract the key points and establish themes. Then, each main themes will be coded. The initial data coding was prepared according to the literature review and new codes (PS6, IV4) were added when new findings were found in this study.

Data will then be tabulated into identified themes. Finally, frequency distribution was used to determine the most popular pricing strategy and its variables by dividing the frequency with total number of interviewees participated in this study.

#### 4. Result and Discussion

##### 4.1 Current Tender Pricing Strategies

As depicted in Table 1, cost based pricing strategies is used by most of the contractors which is 71% (5 out of 7) of interviewees, followed by hybrid pricing strategies which is adopted by 57% (4 out of 7) of contractors, and lastly the combination of cost based and historical price based with 14% (1 out of 7) of adoption rate. From this study, no contractor is adopting market based, historical price based and standard rate table based pricing strategies.

**Table 1.** The current tender pricing strategies used by contractors

Codes	Pricing Strategies	Interviewees' Quotes	Frequency	Percentage	Rank
PS1	Cost based	<i>"Basically we are using cost based by studying the cost, then look at the labour cost and lastly allow a mark-up."</i>	5	$5 \div 7 * 100\% = 71\%$	1
		<i>"We get the source for the material supply then plus labour and profit."</i>			
PS2	Market based		0	0%	
PS3	Hybrid	<i>"We know where is the maximum price that developer will accept, then we will try to make it in that range."</i>	4	$4 \div 7 * 100\% = 57\%$	2
		<i>"Normally client will present their budget to us, so we will try to fulfil client requirement for example their budget."</i>			
PS4	Historical price based		0	0%	
PS5	Standard rate table based		0	0%	
PS6	Combination of cost based and historical price based	<i>"Normally, we already have one historical rate, then we will give to the supplier to adjust his price, then only we will adjust our price."</i>	1	$1 \div 7 * 100\% = 14\%$	3

This finding shows that the pricing strategies adopted by contractors must be those in relation to the cost based pricing strategies such as hybrid and the combination of cost based and historical price based pricing strategies. In the opinion of the interviewees, cost based pricing strategies protect

contractors from losing money and are more reliable than other strategies. “...*In my company, we won't lower our price to get a project, because win a project without profit margin is worthless.*”, expressed by interviewee D. More than 50% of interviewees reported that client would not award the project to the lowest tenderer especially those of unrealistically low tender prices. This is because these kind of tenders prone to have many future problems. Contractor's view on client behaviour can affect contractor's pricing decision such as pricing strategies to be adopted and the mark-up percentage. “...*sometimes we got the information from the consultant, so we can know how much is the client budget, so we play the figure around the budget.*”, said interviewee G.

#### 4.2 Internal Variables Affecting Tender Pricing Decision

Despite the fact that the company strength and weaknesses, company objectives, mission and vision and company risk attitude have been discussed as internal variables based on other study, nonetheless this study shows that these variables do not apply to the construction industry in Malaysia.

**Table 2.** Internal variables in selection of pricing strategies

Codes	Internal Variables	Interviewees' Quotes	Frequency	Percentage
IV1	Company strength and weaknesses	<i>“If that company got financial issue, when there is new tender coming, either he will put a very high price or a very low price.”</i>	1	$1 \div 7 * 100\% = 14\%$
IV2	Company objectives / mission / vision	<i>“Everybody's objectives, mission and vision doesn't actually affect pricing decision.”</i>	0	0%
IV3	Company risk attitude	<i>“I don't think risk attitude affect pricing strategies.”</i>	0	0%
IV4	Top management decision	<i>“I think internal variables would be management decision. It is decided by them. In pricing tender, we have to follow company system..”</i>	4	$4 \div 7 * 100\% = 57\%$
		<i>“Depend on the project, and depend on the boss decision..”</i>		

Based on the findings presented in Table 2, 14% (1 out of 7) of interviewees supported that the company strengths and weaknesses are the internal variables that could change the selection of tender pricing strategies. Financially weak company is likely to adopt market based or hybrid pricing strategies in order to penetrate into the market and obtain the project with low price. Nowadays, clients started to realise the problems of appointing lousy contractor. “*Today you go and buy normal branded shoes and Nike shoes, you see the differences. It pays higher cost for better things.*”, said Interviewee A. Hence, contractors have been selected by assessing the financial, technical ability, experiences, etc. Nonetheless, 57% (4 out of 7) of interviewees will adjust the profit mark-up in accordance to the strength or weaknesses of the company.

Company objectives, mission and vision has been regarded as one of the internal variables in tender pricing strategies decision by Akintoye and Skitmore (1992) and Hall and Hitch (1951). However, the finding is in the contrary to the previous study. It stems from the fact that not every company objective can be achieved by utilising tender pricing strategies. Furthermore, the result of this study has shown that company risk attitude is not the internal variable for tender pricing strategies despite

the fact that it has been mentioned by Akintoye and Skitmore (1992). This result has been agreed by 100% of interviewees. Top management's decision has been mentioned by four interviewees as one of the internal variables. Interviewee G pointed out that *"Depend on the project, and depend on the boss decision."*. *"In pricing tender, we have to follow company system."*, mentioned by interviewee F. This is a new finding since none of the previous researchers had identified this internal variable. The most probable reason is that the target interviewees are persons who are responsible for tender pricing decision instead of the company director and the like.

#### 4.3 External Variables Affecting Tender Pricing Decision

Findings on external variables as presented in Table 3 shows that 42% (3 out of 7) of the interviewees has mentioned that owner's characteristics is the external variables in making pricing strategies decision. Whereas, 29% (2 out of 7) of interviewees will change the level of mark-up instead of the tender pricing strategies to cater for projects with different owner's characteristics. Another 29% (2 out of 7) of interviewees stayed neutral for this variables.

**Table 3.** External variables in selection of pricing strategies

Codes	External Variables	Interviewees' Quotes	Frequency	Percentage
EV1	Owner's characteristics	<i>"My company has been doing all of the Ecoworld project, so we know where is the maximum price that developer will accept, then we will try to make it in that range."</i>	3	$3 \div 7 * 100\% = 42\%$
		<i>"For new developer, we don't know the range of price that he can accept, so we will use cost based pricing strategies."</i>		
		<i>"So when you come to this kind of clients, you price more."</i>		
EV2	Competitors' characteristics	<i>"We would never know how other tenderers price."</i>	0	0%
		<i>"You seldom know your competitor."</i>		
		<i>"This thing is confidential that developer will not disclose."</i>		
EV3	Project characteristics	<i>"If project characteristic like site condition is messy, we need extra machinery like crane, JCB, all these cost will be put in the preliminaries."</i>	0	0%
EV4	Market demand	<i>"About the market demand, it doesn't, not really."</i>	0	0%
		<i>"Market demand I think no influence."</i>		

The tenderers' identities and the submitted tender prices remain confidential in Malaysia's construction industry. Many interviewees think market based pricing strategies are unethical and illegal. Therefore, the competitors' characteristics exert no influence on the adoption of tender pricing strategies. This is the reason explained by interviewees and all interviewees has same similar view on this variable.

Based on the data collected, 100% of interviewees do not regard project characteristics as external pricing strategies in selecting tender pricing strategies. 71% (5 out of 7) of interviewees admitted that diverse characteristics of a project will affect mark-up margin, the other 29% (2 out of 7) said that different project characteristics can be priced in preliminaries. Therefore, the pricing strategies used remains unchanged regardless of different project characteristics.

## 5. Conclusion

To summarize, all three tender pricing strategies currently adopted are cost oriented. This study testified the fact that contractors favour profit over project. Interviewees also believe that these are the best tender pricing strategies. On the other hand, tender pricing strategies to be adopted by estimator for each project takes into account the internal and external variables such as top management decision, company strengths and weaknesses and owner's characteristics. This study has been contributing to the construction estimator on the tender pricing strategy used in the construction industry at the moment. As no one pricing strategy suits all circumstances, the internal and external variables explored in this study allow contractor to consider those variables in making tender pricing decision.

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