



The Influence of Management Capability, Marketing Capability and Competitive Advantage on Malaysian Construction Project Performance

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ABSTRACT

Many construction projects in Malaysia experience a reducing performance. There are many factors affecting the performance of construction projects such as poor site management, inadequate planning, ineffective marketing efforts, etc., which usually lead to project delay and cost overrun. Thus, the purpose of this study was to examine the influence of management capability, marketing capability and competence advantage on Malaysian construction project performance. The sample size of this study was 420 selected construction company's project managers. The hypothesis of this study confirmed the management capability, marketing capability and competence advantage have a relationship with the success of project performance. This research brings a better understanding of the success factors for Malaysian construction project performance.

Keywords: Management Capability, Marketing Capability, Competence Advantage, Project Management

JEL Classifications: L25, M10

1. INTRODUCTION

Malaysian construction industry (MCI) is similar to other countries with regards to its contribution as the economic growth engine and it also reflects the national economic situation. The position of construction industry in the economy can be measured with regards to its size and contribution to the economic activity. The contribution of the construction industry to the gross domestic product is the total value for all organizations from the aspect of purchasing of materials and services from other organizations. However, the construction industry in Malaysia has experienced interesting financial performance over the period of 2001 to 2015 as shown in Table 1. Compared to all other industries, the output of the construction industry has also relatively increased, unlike the agriculture and mining in Malaysia.

MCI is in general categorized into two major areas, namely general construction and special trade works. General construction includes residential construction, non-residential construction

and civil engineering construction. The special trade works area includes the "activities of metal works, electrical works, plumbing, sewerage and sanitary work, refrigeration and air-conditioning work, painting work, carpentry, tiling and flooring work, and glass work" (Ibrahim et al., 2010).

Most of the studies conducted in Malaysia with regards to construction project management relate to the factors affecting construction project delay and cost overrun. Alaghbari et al. (2007) revealed that coordination problems between contractor and owner is one of the significant factors causing delay of building construction projects in Malaysia. Memon et al. (2011) on the other hand, found that lack of experience, inadequate planning and scheduling, poor site management and supervision were among most common and significant factors causing cost overrun in the MCI as perceived by experts.

Large construction projects in Malaysia faced time overrun during construction as identified by Memon et al. (2011) and Jatarona

et al. (2016) in their study. 30 identified projects are mainly the construction work awarded by the government agency that is MARA, which is distributed around Malaysia. Out of 30 projects, 17 (56.67%) projects were caused by 1-100 days time overrun, 5 (16.67%) projects in between 101 and 200 days, 5 (16.67%) projects 201-300 days whereas 3 (10%) projects were delayed for the time period above 300 days. Over 90% of the large MARA construction projects experience delay resulting significant amount of time and cost overrun (Abdullah et al., 2009; Memon et al., 2011).

Ministry of Housings and Local Government statistics on the housing project by the private sector up to October 31st, 2016 show that there were 70 late projects and 272 sick projects (Table 2). Late projects are those that experienced construction delays where the gap between actual works at the site compared to the sales and purchase agreement (SPA) range from 10% to 30%. Sick projects defined as those that experienced construction delays where the gap between actual works at the site compared to the SPA are over 30% or failed to complete within the period stipulated in the agreement.

Therefore, overall reviews suggested that there is a lack of management and marketing capabilities which has resulted in project delay and cost overrun.

2. PROJECT PERFORMANCE

Project performance is defined as an organization's capability to satisfy expectations on cost, time, quality, functionality and achieving business objectives (Liu, 2009). The construction industry's major activity is to undertake projects in constructing new buildings or refurbishing existing ones for different group of clients. According to Navon (2005), project performance compares between the desired and the actual project performances, which then used to update the historical database and control current projects. This is important since it will enable better planning of future projects in terms of costs, schedules, resource allocation. When there is deviation found, the management of the construction company analyses the reasons for it which could be due to unrealistic target setting during the planning, actual construction and also a combination of both.

There are several ways to measure the performance of construction projects. Typical performance measurement in construction focuses on project performance in terms of time, cost and quality (Kagioglou et al., 2001). Criteria of time, cost, and quality have long been used to evaluate the performance and success of construction projects (Chan et al., 2002). Cost is one of the main concerns during the project management life cycle and can be regarded as one of the most important parameters of a project and the driving force of project success (Azhar et al., 2008). Cost overrun is simply as the difference between actual project cost incurred and its cost limit (budgeted amount). This situation happens when the actual project cost project exceeds the budgeted amount. The cost limit of a project is the maximum expenditure that the client is prepared to incur on a completed building project (Jackson and Steven, 2001). After identifying the factors related, it can be concluded that management and marketing capabilities is a valid concern. Among these factors are as the followings.

2.1. Management Capability

Management capability is chosen as one of the main factors, since management is the coordination of all resources through the process of planning, organizing, leading and controlling in order to attain process objectives (Abiola, 2000). Previous studies have defined management capability and managerial capability with regards to managing resources and creating strategic vision. Managerial capability is basically possessing the ability to create a strategic vision and identity for the company, communicate these throughout the organization, and encourage the workforce to achieve them (Lopez-Cabrales et al., 2006). It is important to have more capable and experienced project managers and skilled laborers as delay mitigation strategy and to enable the construction industry to grow at a faster rate both nationally and internationally (Abdul-Rahman et al., 2006). Management capability is comprised of five elements namely.

2.1.1. Competence

Competence is comprised of a competent team members, competent project manager and awarding bids to the right designers or contractors (Toor and Ogunlana, 2008) since projects are very much controlled by the people involved in performing

Table 1: Contribution of various sectors to GDPs

Period	Agriculture (%)	Mining and quarrying (%)	Manufacturing (%)	Construction (%)	Services (%)
2000	8.3	10.2	29.9	3.8	47.7
2001	8.3	10.0	28.5	3.9	49.4
2002	8.1	10.0	28.3	3.8	49.9
2003	8.1	10.0	29.1	3.7	49.1
2004	8.0	9.7	29.9	3.4	49.0
2005	7.8	9.2	29.9	3.2	49.9
2006	7.7	8.6	30.1	3.0	50.6
2007	7.3	8.2	29.1	3.0	52.3
2008	7.3	7.7	28.1	3.0	53.9
2009	7.5	7.3	25.8	3.2	56.2
2010	7.1	6.8	26.9	3.2	56.0
2011	6.8	-4.9	5.4	4.6	7.0
2012	1.0	1.6	4.4	18.1	6.5
2013	1.9	1.2	3.4	10.8	6.0
2014	2.1	3.3	6.2	11.8	6.5
2015	1.0	4.7	4.9	8.2	5.1

Source: Monthly Statistical Bulletin February 2016, Bank Negara Malaysia. GDP: Gross domestic product

Table 2: Overall statistics on problematic private housing projects (delay and sick) until October 31, 2016

State	Number of late projects	Number of sick project
Perlis	1	0
Kedah	7	12
Pulau Pinang	11	28
Perak	8	52
Selangor	21	95
Wilayah Persekutuan	4	6
Negeri Sembilan	0	17
Melaka	7	6
Johor	6	17
Pahang	3	11
Terengganu	0	16
Kelantan	2	12
Total	70	272

Source: Ministry of Housings and Local Government

project related tasks and activities. Competency of the project team is a critical factor that has been frequently mentioned in research studies (Belout and Gauvreau, 2004). Kuen et al. (2009) results also demonstrated empirically that project personnel competency is a critical factor influencing the project success. Project team members that are competent also reduces the loopholes in the project plans preparation and implementation. Project team capability and proficiency were also highlighted as a significant success factor (Nguyen et al., 2004). Inadequate experience of construction firm is among the major contributing factors causing delays of construction project (Murali and Soona, 2007).

2.1.2. Cooperation

Cooperation is a loosely defined term in the construction management literature (Anvuur and Kumaraswamy, 2006). Researchers tend to define cooperation as having the same meaning as collaboration (Bresnen and Marshall, 2000). Cooperation is critical to construction, as well as to other project-based industries due to its uncertainty, interdependence and complexity (Dubois and Gadde, 2002). Over the last decade, numerous research and industry reports have highlighted the importance of cooperation to construction project success (Anvuur and Kumaraswamy, 2006). Lack of cooperation has been blamed for the failure of well-intentioned change initiatives in construction (Cicmil and Marshall, 2005; Koskela, 2003; Dainty et al., 2001).

2.1.3. Commitment

Commitment comprises of effective project planning and control, clearly defined goals and priorities of all stakeholders (Toor and Ogunlana, 2008). Commitment, in general terms, refers to dedication and interest of all related parties in the project; especially, the sponsorship of top management (Toor, Ofori, & Das, 2007), commitment of project sponsor (Fortune and White, 2006), project team involvement (Chan et al., 2001), commitment of project manager (Chua et al., 1999), and commitment to planning and control (Li et al., 2005). Thus, commitment is one of the four COM factors that affect the project success in the construction industry besides comfort, competence and communication (Nguyen et al., 2004).

2.1.4. Project management methodology

A methodology is a structured approach for delivering a project, and consists of a set of processes, with each process having clearly defined resources and activities (Turner, 2000). A project management methodology will set out what an organization regards as best practice; improve inter-organizational communication; and minimize duplication of effort by having common resources, documentation and training (Clarke, 1999). Some organizations adapt their project management methodology from external standards such as the Project Management Body of Knowledge as project life cycles, and management structures are different in every organization (Zielinski, 2005). The benefits of utilizing project management methodology include effective planning and managing of the project; budgets and resources controls (Zmud, 1980); consistent method of reporting for all projects and helps to keep track of project changes effectively by providing appropriate tools and techniques (Kerzner, 2001).

2.1.5. Information and communications technology (ICT) systems

Besides having a proper project management methodology as a guideline, an ICT system which consists of hardware and software can also assist in capturing important information for decision making purpose. Rohaniyati (2009) surveyed owners, contractors and engineers in Brunei and noted that slow decision making as one of the seven major significant factor causing project delay. Brewer and Runeson (2009) found that the adoption of innovative ICT-driven business practices of the firm is determined in large part by the attitude of the decision maker, which changes over time, in response to technological push and cultural pull. Construction firms need to innovate to win projects and to improve the financial results of these projects, and effective use of new technology can provide important competitive advantages for construction firms (Tatum, 1991).

2.2. Marketing Capabilities

Marketing capability is the marketing aspect of the construction company that deals with managing client relationship and managing their expectations. Marketing capability criteria must be satisfied to generate superior performance of the resources possessed (Andersén, 2011). Marketing capability is an important source of competitive advantage for firms (Fahy, 2000) which could improve financial and market performance (Tsai and Shih, 2004). Marketing may help construction companies to differentiate themselves from their competitors and thereby create competitive advantage (Polat, 2010). Due to lack of focus on marketing, construction companies have a tendency to assign limited resources for marketing activities, that is the financial and human resources (Arditi et al., 2008). Marketing capabilities can be divided into two parts; communication and comprehension.

2.2.1. Communication

Communication within project-based industry such as construction, is a challenging task since the interaction process occurs among unfamiliar groups of people working together for certain periods of time before disbanding to work on other project assignment (Dainty et al., 2006). Communication comprises "regular client consultation" and "responsiveness of client" and these two

“are complementary in nature and directly related to client who is the end-user in most cases” (Toor and Ogunlana, 2008). Communication is very important to the client, contractors and other parties involved in the construction project (Chua et al., 1999; Egbu, 1999; Nguyen et al., 2004; Pinto and Slevin, 1988). Lack of communication was noted as one of the significant issues which resulted in cost overruns, delays, failures and conflicts in the projects (Fortune and White, 2006; Toor and Ogunlana, 2006).

2.2.2. Comprehension

According Toor and Ogunlana (2008), comprehension requires the utilization of data and facts to support actions at all levels of decision-making, knowing what the client really wants, client acceptance of plans and clear prioritization of project goals of the client. The reasonable project comprehension project requires the client to play a major role by clearly providing their requirements (Songer and Molenaar, 1997), and then accept the adequate solutions which are sorted after considering all factors together (Morris, 1986). Comprehensive and appropriate design at the right time with clear objectives and scope are also among the most effective methods of minimizing construction project delay (Pourrostan and Ismail, 2011).

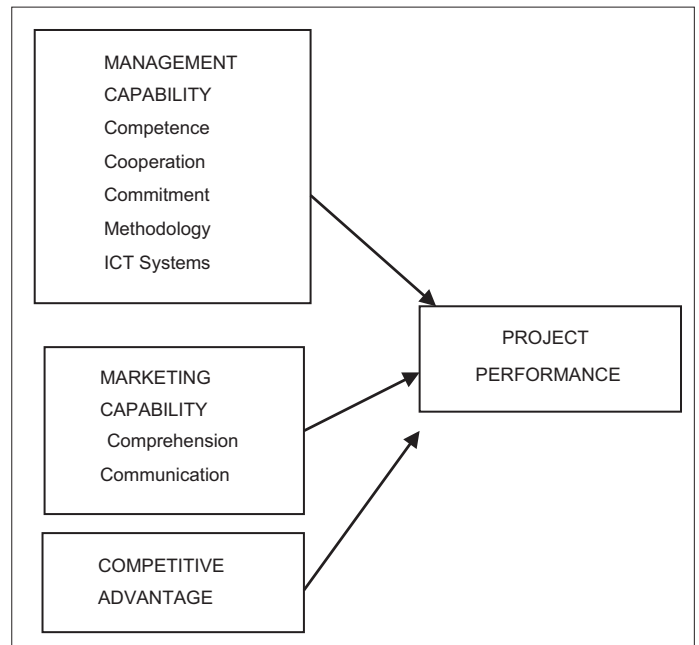
2.3. Competitive Advantage

Apart from possessing the management and marketing capabilities, construction firm also needs to ensure that they are competitive and able to endure any challenges in the competitive construction industry. According to the Market Watch Malaysia (2010), the Malaysian construction market is very competitive with local companies taking the lead. As such, the competitive advantage factor is also included in this study as one of the variables that influence the performance. Competitive advantage is the extent to which an organization is able to create a defensible position over its competitors (Chen et al., 2006). Competitive advantage is simply defined as how companies go to market with the goal of optimizing their market spend to achieve even better results for both short-term and long-term objectives (Safarnia et al., 2011). A significant relationship was also found between competitive advantage and the organizational-based performance of organizations, when organizational-based performance was measured by the emphasis on efficient organizational internal processes, customer satisfaction, employee development and job satisfaction (Wang and Ang, 2004; Neely, 2005).

3. RESEARCH METHODOLOGY

The research framework is shown in Figure 1. The samples for this study were obtained from the directories of Construction Industry Development Board (CIDB). CIDB is the government agency responsible for the registration of construction companies in Malaysia. 800 contractors in Federal Territory Kuala Lumpur and 800 contractors in Selangor which were registered and listed in the CIDB directories, were chosen as the respondents for this study. Random samples were selected from the directory and the questionnaires were sent to those randomly selected companies in the directory either by email or by postal mail. Out of 1600 questionnaires sent, 420 responses received which produced a response rate of 26.3%.

Figure 1: Research framework



4. FINDINGS

The demographic factors of the respondents are shown in Table 3.

Table 3 illustrates about 53% (53) of the respondents were male and 46.7% were female. The majority of the respondents were Malays with regards to ethnicity or race (95.2%) and only 2.9% of Chinese project managers responded. This is possibly due to their uneasiness or uncomfortable to disclose the company information that they considered as confidential to unknown individuals or other third party.

With regards to the highest qualifications obtained, 51.4% of the respondents possessed bachelor degree, followed by 36.2% of the respondents possessed diplomas, 6.7% possessed master’s degree and 1% possessed the doctoral degree. The rest of the respondents possessed SPM, technical certificate and other qualification. This indicates that not many respondents were pursuing the doctoral degree, possibly to time constraints as much of their time were spent on managing the project resources, project team and resolving project related matters.

The result of multiple regression analysis is shown in Table 4.

Table 4 shows that the model is significant ($F = 45.419$) (Significant $F = 0.000$, $P < 0.05$). The F-statistic ($F = 45.42$, $P < 0.01$) indicates that the relationship between independent and dependent variables is significant. The R^2 obtained indicates that the independent variables justified 45.9% of the construction project performance ($R^2 = 0.459$).

5. DISCUSSION

The main purpose of this study was to examine the impact of management capability, marketing capability and competitive

Table 3: Demographic profile of respondent (N=420)

Variable	Categories	N (%)
Gender	Male	224 (53.3)
	Female	196 (46.7)
Ethnic	Malay	400 (95.2)
	Chinese	12 (2.9)
	Others	8 (1.9)
Nationality	Malaysian	416 (99)
	Others	4 (1)
Highest qualifications	Bachelor's degree	216 (51.4)
	Master's degree	28 (6.7)
	Doctoral degree/PhD	4 (1.0)
	Diplomas	152 (36.2)
	SPM/High School	8 (1.9)
	Technical Certificate	8 (1.9)
	Others	4 (1.0)
Position	Director/Senior Manager	76 (18.1)
	Manager/Assistant Manager	48 (11.4)
	Section head/Senior Engineer/	21 (5.0)
	Others	212 (50.5)

Table 4: Summary of multiple regression analysis

Dependent variable: Project performance			
Variable	Standardized coefficients (beta)	t	Significant
(Constant)		2.177	0.030
Comprehension	0.019	0.380	0.704
Communication	0.157	3.237	0.001
Competence	-0.284	-6.356	0.000
Cooperation	0.111	2.513	0.012
Commitment	0.013	0.341	0.733
Project_Methodology	0.287	5.717	0.000
ICT_Systems	0.029	0.636	0.525
Competitive_Advantage	0.377	8.950	0.000
R ²	0.469		
Adjusted R ²	0.459		
F	45.419		
Significant F	0.000		

ICT: Information and communications technology

advantage on construction project performance. A survey was undertaken to determine the influence of these three capabilities on the construction project performance. The hypotheses investigated in this study found some evidence with respect to the purpose of this study and confirmed the results of some previous studies (Abbasi and Al-Mharmah, 2000; Doloi and Lim, 2007; Ling et al., 2007; Nguyen et al., 2004; Phua and Rowlinson, 2004; Rohaniyati, 2009; Rose et al., 2010; Toor and Ogunlana, 2008; Tuan and Yoshi, 2010).

The results show that management capability is positively related to project performance since two out of five management capability variables were positively related to construction project performance, namely cooperation and project management methodology. Competence was found to be negatively related while systems and commitment was not significantly related to construction project performance.

The result shows that marketing capability positively influences the project performance. This result differed from many other

previous studies. This study results show that marketing capability is positively related to project performance since one out of two marketing capability factors is positively related to construction project performance, namely communication. The other factor that is comprehension, is not significantly related to construction project performance. The positive effect of communication on project performance means that adoption of highly effective communication strategy does help in achieving superior project performance.

From the results, it is observed that competitive advantage is positively related to project performance. Competitive advantage is the advantage that the company possesses, as a result from the utilization of its strategic resources via organizational capabilities such as cost, innovation and price advantage. The positive effect of competitive advantage on project performance means that they are capable of implementing appropriate cost reduction strategy, innovation strategy and pricing strategy that leads to superior project performance via improvement in their processes or introduction of new product and services. The result is consistent with findings of Tuan and Yoshi (2010) in Vietnam, which found that “competitive advantage is related to performance” and also study by Rose et al. (2010) which highlighted that competitive advantage does result in superior performance.

6. CONCLUSION

As a summary, with the evidence elicited in this study, we may conclude that management capability, marketing capability and competence advantage can influence the success of project performance among Malaysian construction companies.

Construction firm needs to periodically enhance their processes, product or services and organization because a firm that is successful in innovation could increase their chances of survival and growth. Managers of construction firm must also ensure that all important elements of management and marketing capability such as cooperation, project management methodology and communication are practiced in their organization. Competitive advantage positive effect of on project performance means that firms that are capable of implementing appropriate cost reduction strategy, innovation strategy and pricing strategy will benefit and achieve superior project performance via improvement in their processes or introduction of new product and services. Therefore, they need to establish a proper cost reduction strategy, innovation strategy and pricing strategy to minimize the effect of these external factors.

The government and its agency such as CIDB should also provide necessary assistance and consultative service to construction firms to prepare them with the necessary elements highlighted above. They need to direct more resources and energy to promote and encourage towards enhancing the management capability, marketing capability and competitive advantage of construction firms.

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