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Conceptualisation of Quality Issues in Malaysian Construction Environment

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Abstract

The construction environment has lagged behind other industries in improving the quality. Though it is a major contributor to the economy of any country, it faces the problem of high fragmentation, instability, low productivity, poor quality and lack of standards. This paper aim to investigate the quality issues in Malaysian construction environment. An extensive literature review and preliminary interview was done and findings show that Malaysian construction environment does have quality problems throughout the construction process. This paper provides evidence for the on-going research undertaken by the author, the need to establish the quality purchasing process framework to the Malaysian construction industry.

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Keywords: Quality; issues; construction environment

1. Introduction

The construction environment has a unique and own characteristic and qualities that make it differ from other sectors. The construction is unique, future in nature and involves extraordinary diversity of professions, specialist and suppliers. Nevertheless, the condition of construction environment was seen as one with poor quality emphasis compare to other sectors. Wan Mahmood et. al (2006) state that many criticism had been pointed to the construction environment due to the workmanship performance, construction processes, the organisations involved, the materials, etc. There is a requirement, to improve and upgrade the standard, quality and professionalism in all disciplines in the construction environment (Andrew

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Tan, 2005). Under Construction Industry Master Plan (CIMP) 2006-2015 done by CIDB, high lightened the issues of quality. This is fully elaborate under Strategic Thrust 3; strive for the highest standard of quality, occupational safety and health, and environmental practices. The impact of quality improvement can be linked to Strategic Thrust 7; benefit from globalisation including the export of construction products and services (CIDB, 2008).

To be competitive in today's market, it is crucial for construction companies to provide more consistent quality of work, value, to initiate more teamwork at the job site and develop a better relationship with stakeholders. To assure quality, quality implementation must start at the beginning (input stage), during (in-process) and at the end (finished goods) of the production process (Ab. Wahid, 2006).

Kandeil et al. (2010) indicate that quality in the construction environment still needs further development. Even though most of the construction companies are ISO certified and some of them have quality management systems and audits, there is still a low performance of improvement to achieve end customer satisfaction.

Effective quality implementation has become an issue in Malaysian construction environment, which related to business performance, as well as construction final products. Hence, this research aims to investigate the current quality issues in Malaysian construction industry. The information is obtained through an extensive literature review, on the quality issues in the construction environment at large. Preliminary interview was conducted to obtain information in the context of Malaysian construction environment.

2. Construction environment

The construction industry is one of the pillars of the domestic economy for most countries. Although it has features in common with other sectors, such as manufacturing and services, it is unique in various aspects. This uniqueness is attributed to four kinds of uncertainty; [1] natural uncertainty, [2] task uncertainty, [3] organisational uncertainty, and [4] Contractual uncertainty (Walker, 2002). The construction environment plays an important role in developing the economic and status of the country. The construction process itself involved with unpredictable factors. Therefore, an efficient and successful construction project is indicating by project completion on time, within the budget given and to the specified quality (Ramanathan et al., 2012).

The construction environment carries social responsibility as to produce safety buildings and structures that give minimal impact to the environment and provides infrastructures support, to other sectors. However, due to insufficient and inefficient management practices, the construction environment has led to excessive costs, time waste, increase errors and misunderstanding (Othman, 2011). Malaysia began to develop the construction industry since independence where it plays a crucial part in the economy as a major indicator and determinants of domestic performance inclusive the process of industrialisation, social infrastructure and reproduction. The Malaysian Government has realised the importance of building up the construction industry to benefit other sectors along the way (Ibrahim et al., 2010).

Even though Malaysian construction environment has undergone several transformations and become one of the most important industries that contribute to economic growth, they are still at par with other developing countries (Hashim et al., 2012). Sodangi et al. (2010) indicate that construction environment comprises of multitude professions, complicated nature of operation and different phases of construction projects. This will affect the quality of the final project. Ibrahim et al. (2010) indicate that Malaysian construction environment comprises of general construction and special trades. However, due to the complexity in nature, the construction environment face crucial problems such as delays in completion dates during the construction stage, budget was exceeded, poor image, low productivity, wastage in construction materials, shortage of manpower and the quality was not always up to the expectation.

3. Quality issues

Quality is a broad concept and defining quality can be difficult. There is no one universal definition of quality. The following definitions given by three most popular quality management gurus; Juran, Deming and Crosby respectively; [1] quality is “fitness for use” [2] quality is “a predictable degree of uniformity and dependability at low cost and suited to the market and [3] quality is “conformance to requirement” (Ab. Wahid, 2006).

According to Basu (2004), quality experts have different views in defining quality such as fitness for purpose, right first time, what the customer wants conformance to standard, value for money and right thing at the right time and others. Therefore, quality is fundamental to high-performing organisations and organisations should focus on the quality of goods or services. Moreover, the organisations should emphasise the quality concept in the management practices of the organisation (Evans et al., 2008).

The central, unifying concept of every quality approach is that everything an organisation does, is part of a continuous improvement process through deliberate, on-going, positive changes that organisation can keep up with the expectations of the customer and the quality of the competitors (Reilly, 1999). Hence, improve the quality of a product or process will contribute towards more efficient and effective use of resources which resulting in faster, better and easier work. The challenges are different and it is how to manage organisations in a virtual environment. Furthermore, the organisations should continue to deliver extra value for customers who are more and more difficult to satisfy.

Quality in the construction environment involved with doing the job in time, achieved the specification requirements and getting the job done within the budget given. The main factors involve with quality issues are the application of quality standard, management commitment, communication, activities during design and planning and relationship between construction players (Kandeil et al., 2010).

Quality and quality improvement have been receiving increasing attention worldwide. The need for achieving quality of the final product in the construction environment is equal important to other industry. However, compared to other industry, construction activities always related to discontinuous, dispersed, diverse and distinct. Therefore, the setting of quality is more difficult to implement and improvement in quality is difficult to achieve (Albert Chan et al., 2003).

The project quality is the key to success and the quality level of a project reflects the level of technology and management. The quality is divided into decision making, survey, design, construction, acceptance and use of process (Jiang, 2010). Moreover, the quality should also consider the entrepreneurs and social responsibility so as to keep competitive advantage.

Low and Peh (1996) states that the quality of construction work is dependent to a large extend on the attitudes of the contractors and consultants. Hence, the quality of the products is adversely affected if the parties to the contract do not carry out their duties properly. It is very importance to have a good coordination flow and improved teamwork to achieve the project quality objectives. A quality system will not succeed unless the construction organisations improve their quality continuously in terms of products and services. Through this they are able to compete aggressively in an environment where the quality requirement is always rising (Chan Loong et al, 2009).

Additionally, a major quality challenge in the construction environment is applying the principles on the job site. Construction offers much more variability; each project represents a unique formula of design, location, personnel, materials, weather, cost, and time.

Idoro (2010) indicate that the quality of the project in the construction environment are influence by standard of workmanship, assessment by the client on the quality of construction materials, level of defective works and maintenance costs of the project. Moreover, the safety of every construction structure and the satisfaction of the stakeholders depend on the construction quality.

4. Quality issues in Malaysian construction environment

Recognition for quality is the goal of every construction company as it positions itself above their competitors. The reality is most of the organisations are still far behind from realising the full benefits of quality standard. Quality is very important to increase the performance of organisation by optimising their operations, client's satisfaction and meeting the goals of business (Laxana Naidu, 2005).

In Malaysia construction environment, the actual benefits of having quality are to improve the functionality and achieve a certain level of clients' satisfaction. Among quality issues involved in the construction environment are project management practices, financial management and project success (Din et al., 2011)

Quality challenge in Malaysian construction environment is related by those actually doing the work, offsite and on site activities, project management, construction process, training and education, teamwork, supplier partnership, policies and recognitions (Sodangi et al., 2010; Wan Mahmood et al., 2006).

According to Said et al. (2009), there are three main factors affecting the construction quality; lack of management commitment, inconclusive interpretation of standard requirements and training policies. By implementing the quality in the construction environment, several advantages have been identified. They are construction organisation image and reputation development, performance and client's satisfaction improvement, establishment of documentation procedures and instructions and constant quality service.

Additionally, issues such as understandable and applicable design, conformity of design with the required specification, economic of construction environment, ease of operation and maintenance and energy efficiency need to be considered in construction quality. The practices of quality in the construction environment are also including the human resource management, supplier relationship, management commitment and information and analysis (Abdul Rahman et al, 2010).

Che Ali et al. (2010) highlight that the main issues in construction quality are the involvement of the contractors in the construction process, optimise resources to materialise the final construction products, meeting the specification requirement and implementation of formal quality system.

5. Research methodology

The objective of this research is to investigate the quality issues in Malaysian construction environment. This research provides confirmation on the preliminary information for the on-going research undertaken by the author, to establish the quality purchasing process framework to the Malaysian construction industry.

In this research, an extensive literature review was done in order to obtain information pertaining quality issue in the construction environment, at large. However, to support the information in the context of Malaysian construction environment, preliminary interview was conducted among Malaysian construction players. Feedback from the construction industry was important in obtaining better information upon quality issues in Malaysian construction industry.

From the literature review, the issues of quality in the construction environment were outlined and the information was obtained during the preliminary interview sessions. In the preliminary interview, fifteen interviews were conducted with representative from construction companies. The respondents are generally from construction companies registered under Construction Industry Development Board (CIDB). The respondents are from ISO registered companies and involve with building works and civil works in Malaysian construction environment.

6. Discussion

Quality has become one of the crucial issues in the construction environment. This is due to the nature of construction environment itself which include fragmentation, complexities in materialise the final construction products, involvement of multi-disciplinary of professions and lack of standards implementation. The discussion comprises three section; discussion from literature reviews, discussion from preliminary interview and overall discussion for both sources.

6.1. Discussion from literature reviews

An extensive literature review were done based on the issues of construction environment at large, quality in construction, at large and quality issues within the Malaysian context. The issues pertaining quality in the construction environment summarised from literature reviews were:

6.1.1. Management commitment

Management commitment was related to any obligation towards certain activities or jobs. Management commitment influenced the quality implementation in the construction environment. Top management commitment was very important in enhancing construction quality as they initiate and control the quality system. However, lack of enforcement in implementing construction quality by top management had affected the construction products. Additionally, low commitment from the project members in implementing quality in the construction can be an obstacle to improve the organisations' business performance and the quality of final construction products.

6.1.2. Quality culture and attitude

Quality culture and quality attitude was the behavioural actions on quality from the management and staff in the organisations. Similarity of quality culture and positive quality attitude was the main factors in developing changes in the construction environment especially for the quality. Nevertheless, there was constrains in adopting and implementing quality in the construction environment as different companies had a different quality culture and attitude. Some companies implemented quality to improve their business performance and corporate image. Other respondents perceived quality as to fulfil the standard quality obligations and requirements.

6.1.3. Nature of construction environment

Construction environment comprised multi-disciplinary profession, fragmented construction condition, different phases of the construction process and involved with adversarial. Hence, implementation of quality in the construction environment became more complex and difficult to apply as there was no standardisation in construction projects.

6.1.4. Material quality by supplier

Quality of construction materials was the key factors in contributing success in the final construction products. The selections of construction material need to be considered at the earlier stage of construction phases to prevent low quality, major defects and excessive costs. Currently, there were a lot of material suppliers who refer to a different type of quality system and this will lead to difficulties in assuring the level of construction quality of the final construction products.

6.1.5. Supplier relationship

Supplier relationship was more to the association between management of construction organisations and the suppliers. They supplied components or materials for the organisation to produce construction products. However, in the construction environment, the management of organisations have a tendency to select suppliers based on lowest quotation cost offered by them. This affected the quality in the construction environment as the quality of the material had an impact on the quality of final construction products.

6.1.6. Competitive bidding

Competitive bidding involved client and the selection of contractors in a transparent manner. Generally, the bidding was aimed to obtain the best goods and/or services suggested by the contractors. In some procurement, the clients prefer to select the contractors with the lowest bid. However, there were contractors (with the lowest bid) did not follow the quality requirements for each specification, materials or products. Thus, it effected the whole quality implementation in the construction environment and lead to excessive project cost.

6.1.7. Communication

Communication involved with the interaction among people within the organisations and in the construction environment. It was a two-way process in transferring construction information among construction players. However, there were organisations in the construction environment that had ineffective communication either between the staff within their organisations or amongst clients, construction organisation and suppliers. Ineffective communication directed to improper delivering for most construction works and process. This will affect the quality of the construction process and final construction products.

6.1.8. Project information, specification and documentation

Project information was important to ensure the right decision being made and appropriate action can be taken in future. The process of getting project information was part of quality process in producing good construction products. Hence, inaccurate project information led to incorrect construction implementation. For the issues of specification and the documentation, client was likely to give lowest specification of certain materials or products due to budget constraints and contractors will definitely had to follow it. This will reduce the quality in the construction environment.

6.1.9. Project supervision

Project supervision was carried out to monitor the situation in the construction site. This was done through some inspection, testing and monitoring of materials and workmanship on site. Proper project supervision resulted high quality of the construction projects. Conversely, construction environment is still lacking in applying the appropriate project supervision. As a result, quality factors were not considered as important issues and massive completed projects had problems after the occupancy.

6.2. Discussion from preliminary interview

From the summarisation of literature reviews, questions were outlined to obtain detail information on quality issues in the context of Malaysian construction environment. The findings from the preliminary interviews were as followed:

Table 1. Quality issues in Malaysian construction environment

Description	Respondents															Total	Percent (%)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Management Commitment												/			/	2	13
Quality Culture and Attitude		/	/	/							/	/	/		/	7	47
Nature of Construction Environment	/			/				/	/	/						5	33
Material Quality by Supplier		/	/	/	/	/	/				/	/	/	/		10	67
Supplier Relationship	/	/	/					/	/	/				/	/	8	53
Competitive Bidding	/			/	/	/	/	/								6	40
Communication	/							/	/	/		/	/	/	/	8	53
Project Information, Specification and Documentation	/							/	/	/		/	/	/		7	47
Project Supervision		/	/	/	/	/	/				/				/	8	53

Table 1 highlighted the quality issue in Malaysian construction environment. The respondents were interviewed whether they had problems or issues pertaining quality implementation throughout their experience working with the construction organisation. Most of the respondents, which contributed to 67%, mentioned that the materials supply by the suppliers was the main issue influencing the quality in the construction environment.

Other important issues affecting the quality implementation in the construction environment was supplier relationship and communication (53%). Several respondents expressed that the selection of supplier was based on the cheapest material quotation and other respondents selected the supplier based on a good track record. The situation led to adversarial among parties involved and affected the quality of final products. Ineffective communications often occur among staff in the construction organisations and with sub-contractors and this indirectly influenced the quality in the construction environment.

The respondents contributed only 47% for the adaptation of quality culture and attitude in the construction organisations and knowledge of project information, specification and documentation. This was due to most of the respondents have an obligation to follow the quality requirements. Moreover, by implementing the quality culture, the business performance has been increased. Competitive bidding was one of the issues in construction quality, but the issues only contributed of about 40%, followed by nature of the construction environment and management commitment that contributed 33% and 13% respectively.

6.3. Overall discussion

Generally, the issue pertaining quality in the construction environment which have been emphasised by other researchers, is significant to the response given by the respondents during the preliminary interviews. From the quality issues outlined for Malaysian construction environment, it showed that the quality

implementation needs to be done throughout the construction phases. This was due to all quality issues highlighted occurring throughout the construction phases. Figure 1 explained the relationship between the quality issues in Malaysian construction environment with the construction process.

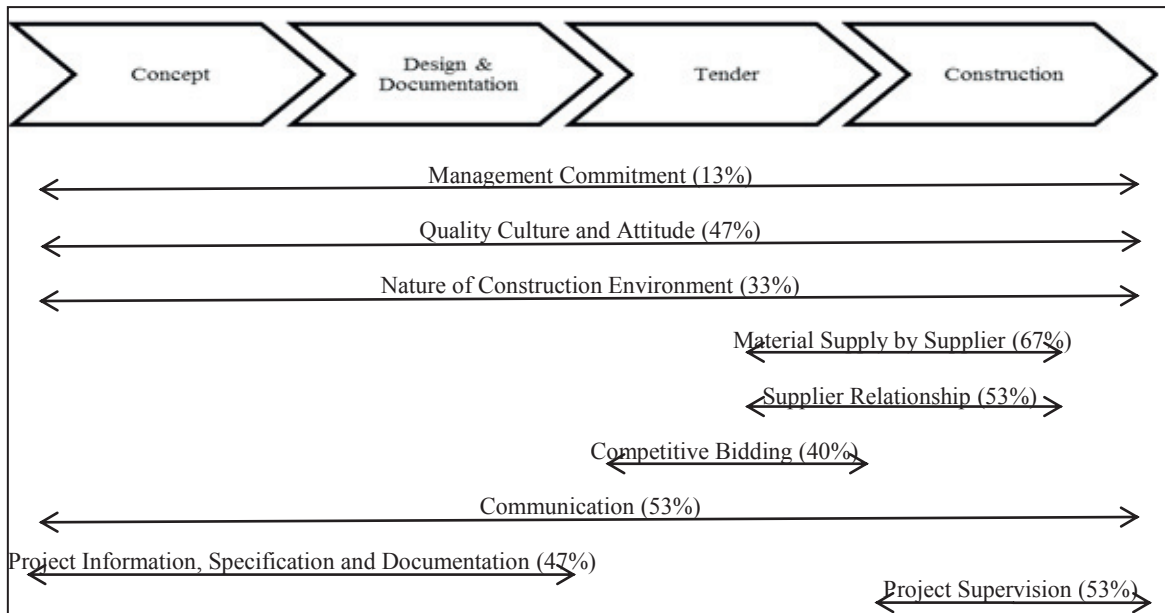


Fig. 1. Quality issues throughout construction phases for Malaysian construction environment

7. Conclusion

The construction environment has traditionally implemented minimum quality requirements for most of the construction projects. Even though most of the organisations in the construction environment have the quality standard, the quality implementation is perceived only to fulfil the construction requirements and for promoting the corporate or companies image. However, there is several construction organisations have proven that considering and implementing quality in their organisation and throughout the construction process contribute direct benefits to the companies. Hence, the initial steps in implementing successful quality in the construction environment are to recognise issues in the construction environment itself and the issues in construction quality. This is done to achieve better construction outcomes and improve business performance. Subsequently, construction players should remove the barriers or issues that prevent the implementation of quality in the construction environment. Quality implementation is very important in the construction environment since the activities in the construction environment affected other sectors and national economy. Therefore, to make changes in the construction environment, management must be committed and quality culture must be created to nurture a positive attitude. Moreover, quality implementation reflects the business performance and image of the organisations and contributes to the impact of final construction output.

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