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TOP MANAGEMENT COMMITMENT TOWARDS QUALITY MANAGEMENT IN THE CONTEXT OF MALAYSIAN CONSTRUCTION ORGANIZATIONS

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ABSTRACT

Top management commitment towards quality management is generally perceived as one of the key factors in determining its success. It has been observed that the local construction industry is facing a lot of quality issues. In relation to this, the authors are trying to perceive quality management in the context of Malaysian construction industry from the perspective of top management commitment. The research aims to identify the constructs of commitment from literatures and explore the top management commitment towards quality management in building construction projects based on the constructs identified in the context of Malaysian construction organizations. Survey samples were drawn from the construction organizations of G5, G6, and G7 registered with the Construction Industry Development Board (CIDB) Malaysia. Research findings show that the top management of construction organizations is generally committed to quality management implementation from the perspectives of quality goals, efforts, involvement and attitude to change. Nevertheless, there are some areas which need to be improved. Firstly, quality is still lacking in terms of its importance in the mentality of the top management compared to cost and time and secondly, resources allocation should be further increased to a more satisfactory level.

Keywords: Quality management, construction projects, constructs, top management commitment.

1. INTRODUCTION

A typical construction client's concerns include whether his/her project can be completed within cost and time allocated, and whether it has obtained satisfactory quality. Ashford (1992) defines quality as a summation of those characteristics, which together make a product acceptable to the market. The concept of quality can be translated into the quality dimensions that include: performance, reliability, conformance, durability, serviceability, aesthetics and perceived quality (McGeorge *et al.*, 2000; Evans *et al.*, 1999).

The quality of construction works can be evaluated based on the aforementioned quality dimensions although it can be rather subjective on certain dimensions such as aesthetics and perceived quality. On the other hand, a contractor should strive for high levels of the quality dimensions on his/her project. The achievement of these dimensions is through appropriate management of all processes that deliver those (McGeorge *et al.*, 2000). In terms of quality management, Harris *et al.* (2001) emphasised that it is a major management function within construction organizations for them to compete effectively in the construction market. The quality of construction works produced by a construction organization has significant implication on the reputation and competitive advantage of the organization in the construction market. Abdul-Rahman (1996) explained that management of quality in construction is an important factor in determining the competitive edge of a construction business. Similarly, Landin (2000) stated that quality management appears to be considered primarily as a means of increasing effectiveness and enhancing competitive advantage.

Taylor *et al.* (2003) concluded that senior managers' involvement, understanding and customer focus are essential antecedents of TQM success. Samson *et al.* (1999) described that leadership and human resources management are among strong predictors of performance TQM practices.

On construction-related researches, Low *et al.* (2004) commented top management commitment as one of the elements that would reflect TQM performance measures in construction firms. Chin *et al.* (2003) found that top management commitment is the most critical factor for successful ISO9000 implementation. Haupt *et al.* (2004) argued that high levels of management actions would lead to reduced prevalence of the problems as TQM is deployed on construction sites. Arditi *et al.* (1997) emphasized that management commitment to quality and to continuous quality improvement is very important in each phase of the building process. Biggar (1990) recommended that management must fully understand and support the TQM process and actively participate in its implementation rather than delegate it.

The ISO 9001:2000 requires the following practices in relation to management commitment, namely: communicating about the importance of meeting customer as well as statutory and regulatory requirements, establishing the quality policy, ensuring that quality objectives are established, conducting management reviews, and ensuring the availability of resources.

The above literatures examined the concept of quality and its management in construction industry. The importance of top management in quality management was addressed. Top management commitment towards quality management is generally perceived as one of the key factors in determining its success.

It has been observed that the local construction industry is facing a lot of quality issues. In relation to this, the authors are trying to perceive quality management in the context of Malaysian construction industry from the perspective of top management commitment. The understanding on the top management commitment of construction organizations towards quality management in construction project in Malaysia is limited as literatures on such studies focusing on local scenarios are difficult to be obtained in established publications.

2. OBJECTIVES

The objectives of this research are to:

1. Identify the constructs of commitment from literatures.
2. Explore the top management commitment towards quality management in building construction projects in the context of Malaysian construction organizations.

3. CONSTRUCTS OF TOP MANAGEMENT COMMITMENT

This section records the reviews on the top management commitment in quality management. It aims to identify the constructs adopted by researchers and the definition in the dictionary. The identification of constructs and definition is necessary for the research to proceed.

Oxford Dictionary (2001) defined “commitment” as the state or quality of being dedicated to a cause or activity. Some researches have been reviewed to identify the constructs for management commitment as quality management is concerned.

Top management commitment in quality management implementation has drawn much attention from researchers (such as Ahire *et al.*, 1998; Chin *et al.*, 2003; Low *et al.*, 2004). Rodgers *et al.* (1993) concerned the influence of top management commitment on the success of management programme generally.

Fottler (1977) emphasized on putting something as priority compared to other considerations, and effort put, as the indication of management commitment on it. Juran (1988, 89) referred commitment to quality management as leadership, participation, resources allocation, monitoring, and recognition as regard to it. Feigenbaum (1989) related involvement with management commitment.

Biggar (1990) found understand and support, and active participation as the constructs for management commitment. Rodgers *et al.* (1993) were of the opinion that goal setting, feedback, and participation to be the roles to be played by the management.

Low (1994) explained that the support shown by management in quality management indicate the level of its commitment. Crosby (1996) stated that participation, and having the right attitude reflect the commitment of management in quality management.

On the same matter, Goffin *et al.* (1996) highlighted the constructs of time and effort spent, clear goals, expertise, and focus on employees. Arditi *et al.* (1997) were more concerned in putting quality management as the priority, and to lead in its implementation. Goetsch *et al.* (1997) stressed on the involvement, and resources allocation. Similarly, Ahire *et al.* (1998) highlighted priority, involvement, goals, and resources allocation.

Howard *et al.* (1999) mentioned having quality strategy as the construct for management commitment towards quality management. On the other hand, Samson *et al.* (1999) put leadership and involvement as the constructs, whereas, Jaafari (2000) highlighted only leadership.

Chan *et al.* (2000) were other researchers who referred priority and resources allocation as the constructs of management commitment. On the same issue, Harris *et al.* (2001) were more concerned on initiative whereas Taylor *et al.* (2003) were looking at involvement.

Chin *et al.* (2003) stressed that for the management to be considered as committed towards quality management, they ought to have common goals on it, review and continuous improvement, involvement and leadership, and attitude to change as far as quality management is concerned.

Haupt *et al.* (2004) considered initiatives, and support to be the constructs for management commitment. Low *et al.* (2004) had their attention on allocation of budget, planning for change,

and providing methods of monitoring process. On the same issue, Thevnin (2004) used willingness to change for quality improvement, and participation shown to measure management commitment whereas Dadzie (2004) focused on initiatives, resources allocation, communication, and recognition/reward.

Summary of the above review is in Table 1. Based of the table, the commitment towards quality management is summarized into six constructs. These are: quality goals, priority, efforts, involvement, resource allocation and attitude to change.

1. **Quality goals**
The most basic criteria for management commitment towards quality management should be the having of goals for quality. A goal is an objective to achieve or a direction to move forward.
2. **Priority**
Management commitment on quality management can also be perceived from the extent they place the importance of quality in relation to other considerations such as time and cost.
3. **Efforts**
Effort for quality is another aspect to judge management commitment on quality management. A person who puts an effort to enhance quality for product or services can be seen as being serious and committed to quality.
4. **Involvement**
In terms of directness, the involvement of management in quality management can be direct (personally involved) or indirect (through delegation). From the angle of activeness, the involvement can be active or passive. To what level the management is involved in quality management indicates its commitment in the quality management implementation.
5. **Resources allocation**
To implement quality management, sufficient resources are necessary. Basically, they are human resources and financial resources. The management of an organization plays the role of distributing resources for various needs. A committed management in quality management should try its best to allocate sufficient resources for the purpose.
6. **Attitude to change**
Human beings normally resist change once they get used to certain habits, procedures, or methods. Such phenomena are even more severe if the practices have become part of their culture. A strong commitment might be required to get these practices changed even if such change is known for the good of themselves. With regard to the known difficulties in getting a person to change, management of an organization which is willing to change its practices for the purpose of quality management can be perceived as being committed about quality management.

Year	Author(s)	Industry	Research Methodology	Research Area	Constructs of Management Commitment
1977	Fottler	Finance	Case studies	Management commitment	Priority, effort
1988	Juran	General	-	Companywide QM	Leadership
1989	Juran	General	-	Strategic QM	Participation, resources allocation, monitoring, recognition
1989	Feigenbaum	General	-	Total quality control	Involvement
1990	Biggar	Construction	Reviews	Total Quality Management	Understand and support, actively participate
1993	Rodgers <i>et al.</i>	General	Meta-analysis	Top management commitment	Goal setting, feedback, participation
1994	Low	Construction	Case studies, q. survey	ISO 9000	Support
1996	Crosby	General	-	Management participation	Participation, right attitude
1996	Goffin <i>et al.</i>	General	Interviews	Management commitment	Time and effort, clear goals, expertise, focus on employees
1997	Arditi <i>et al.</i>	Construction	Reviews	Total Quality Management	Top priority, lead
1997	Goetsch <i>et al.</i>	General	-	Quality management	Involvement, resources allocation
1998	Ahire <i>et al.</i>	Auto parts	Questionnaire survey	Top management commitment	Priority, involvement, goals, resources allocation
1999	Howard <i>et al.</i>	High-tech	Questionnaire survey	Management commitment	Quality strategy
1999	Samson <i>et al.</i>	Manufacturing	Questionnaire survey	TQM practices	Leadership, involvement
2000	Jaafari	Construction	Reviews	Business competitiveness	Leadership
2000	Chan <i>et al.</i>	Manufacturing	Case studies	Total Quality Management	Priority, resources allocation
2001	Harris <i>et al.</i>	Construction	-	Quality management	Initiative
2003	Taylor <i>et al.</i>	General	Questionnaire survey	Management commitment	Involvement
2003	Chin <i>et al.</i>	Construction	Interviews	ISO 9000	Common goal, review and continuous improvement, involvement and leadership, attitude to change
2004	Haupt <i>et al.</i>	Construction	Questionnaire survey	Total Quality Management	Initiatives, support
2004	Low <i>et al.</i>	Construction	Case studies	Total Quality Management	Allocation of budget, planning for change, providing methods of monitoring progress
2004	Thevnin	General	Reviews	Management commitment	Willing to change, participation
2004	Dadzie	Service (library)	Case studies	Management commitment	Initiatives, resources allocation, communication, recognition/reward

Table 1: Summary of Literature Review for Management Commitment in Quality Management

4. SURVEY METHOD

The survey questions for this research were designed to determine the top management commitment towards the implementation of quality management in construction projects from various constructs as below:

1. Quality goals.
2. Priority.
3. Efforts.
4. Involvement.
5. Attitude to change.
6. Resources allocation.

Cooper *et al.* (1998) defined mail survey as a self-administered questionnaire delivered by the postal service, facsimile, or a courier service. In this survey, all questionnaires were sent by normal post. The administration of mail survey for this survey had seriously taken consideration of the concerns of Punch (1998), i.e. to ensure that respondents had been approached professionally, and the researcher should stay in control of the data collection procedure. For the purpose to ensure that respondents had been approached professionally, the cover letter attached to each questionnaire had fully informed about the purpose of the research. The total number of questionnaires for this survey was 1,500.

5. SELECTION OF SAMPLES

The population for this research is interpreted as all the construction companies in Malaysia those undertake building construction contracts. Survey samples were drawn from construction companies in Selangor and Kuala Lumpur which registered with the Construction Industry development Board (CIDB) under the category of building construction, from grade G5 to G7. The reason for construction companies of both areas were selected was that the total number of companies registered is relatively large compared to other areas. Under the terms of registration of CIDB for construction companies, there are seven grades (from G1 to G7) where G1 been the smallest with tendering capacity of not exceeding RM100,000 and G7 been the largest with unlimited tendering capacity. The tendering capacity for G5 and G6 are not exceeding 5 million and not exceeding 10 million respectively (both in ringgit Malaysia) (CIDB, 2005). As the three highest grades, the construction companies of grade G5, G6 and G7 perform a major role in the construction industry and their implementation of quality management should best reflecting the actual scenarios.

The CIDB directory as on the CIDB web site (www.cidb.com.my) on 27 March 2006 comprised 2,808 construction companies (sampling units) for the groups concerned. The breakdown is shown at Table 2. With the understanding of bigger sample size would generally increases the precision of survey results, together with the consideration of financial affordability (Mangione, 1995), a sample that comprises of 1,500 sampling units was randomly drawn (proportionate to the number of sampling units for each grade at each area) from the sampling frame. The breakdown of the sample is shown at Table 3.

Grade	Wilayah Persekutuan (Kuala Lumpur)	Selangor	TOTAL
G5	350	572	922
G6	150	226	376
G7	655	855	1,510
TOTAL (G5, G6 & G7 for both areas)			2,808

Table 2: Number of Sampling Units in the Sampling Frame

Grade	Wilayah Persekutuan (Kuala Lumpur)	Selangor	TOTAL
G5	188	305	493
G6	80	121	201
G7	350	456	806
TOTAL (G5, G6 & G7 for both areas)			1,500

Table 3: Number of Sampling Units in the Sample

6. RATE OF RESPONSE

There were 131 responses received at the stipulated date that the questionnaire should be returned. Out of the 131 responses, 129 were in the form of returned questionnaire and 2 were in the form of e-mail indicating they were not participating. There should also be noted that there were 2 questionnaires returned by the postal service due to the addressees had either shifted or ceased operation. Therefore, the total number for questionnaires successful sent out was 1,498. Considering all the above, the rate of response for this survey is 8.74%.

From the 129 returned questionnaires, 12 were rejected for further analysis due to various reasons. These included empty questionnaire returned, incomplete for most of the questions, and unserious attitude shown by the respondent by rating the same to almost all questions. After excluding these rejected questionnaires, the remaining questionnaires used for further analysis were 117 which equivalent to 7.88% of 1,484 (the number of total sent out after minus 14 for those rejected to participate and rejected questionnaires received).

The number of usable questionnaires (117) is more than the minimum number of respondents required for statistical analysis (Bouma, 1998; Lewin, 2005). In fact, the number is sufficient to be categorized under the category of large sample for statistical tests of almost all nonparametric methods (Mann, 2004).

7. RESULTS AND ANALYSIS

Respondents were requested to indicate the extent of their agreement on each item of questions asked as regard to the top management of their organizations. The scale provided were strongly disagree, disagree, neutral, agree, and strongly agree. The results are as shown in Table 4.

7.1 Quality goals

Questions on the construct of quality goals are Questions 1 and 2.

In Question 1, 61.5% of respondents agreed and 21.4% of respondents strongly agreed that the top managements of their organizations clearly identify project quality goals for project management teams to achieve. Total percentage of respondents who either agreed or strongly agreed to this question is 82.9%.

In Question 2, 64.1% of respondents agreed and 20.5% of respondents strongly agreed that the top managements of their organizations ensure that project quality goals are known to every member of the project management teams. Total percentage of respondents who either agreed or strongly agreed to this question is 84.6%.

The results show that the top management of construction organizations are generally having quality goals for their construction projects.

7.2 Priority

Questions on the construct of priority are Questions 3 and 4.

In Question 3, 36.8% of respondents agreed and 8.5% of respondents strongly agreed that the top managements of their organizations treat quality as being more important than cost. Total percentage of respondents who either agreed or strongly agreed to this question is 45.3%.

In Question 4, 34.2% of respondents agreed and 4.3% of respondents strongly agreed that the top managements of their organizations treat quality as being more important than time. Total percentage of respondents who either agreed or strongly agreed to this question is 38.5%.

The results clearly indicate that the top management of construction organizations are not treating quality as their priority in relation to the elements of cost and time.

7.3 Efforts

Questions on the construct of efforts are Questions 5 and 6.

In Question 5, 66.7% of respondents agreed and 15.4% of respondents strongly agreed that the top managements of their organizations ensure continuous efforts in enhancing the quality of construction works. Total percentage of respondents who either agreed or strongly agreed to this question is 82.1%.

In Question 6, 61.5% of respondents agreed and 18.8% of respondents strongly agreed that the top managements of their organizations always source for new ideas to enhance quality of construction works. Total percentage of respondents who either agreed or strongly agreed to this question is 80.3%.

The results reveal that generally the top management of construction organizations are putting efforts in quality management for construction projects.

7.4 Involvement

Questions on the construct of involvement are Questions 7 and 8.

In Question 7, 56.4% of respondents agreed and 12.0% of respondents strongly agreed that the top managements of their organizations are involved frequently in the quality management process. Total percentage of respondents who either agreed or strongly agreed to this question is 68.4%.

In Question 8, 56.4% of respondents agreed and 16.2% of respondents strongly agreed that the top managements of their organizations are personally involved in the quality management process. Total percentage of respondents who either agreed or strongly agreed to this question is 72.6%.

The results show that the top management of construction organizations have to get themselves more involved in quality management processes.

7.5 Attitude to change

Questions on the construct of attitude to change are Questions 9 and 10.

In Question 9, 58.1% of respondents agreed and 15.4% of respondents strongly agreed that the top managements of their organizations have strong willingness to change current work procedures to conform to requirements of quality system. Total percentage of respondents who either agreed or strongly agreed to this question is 73.5%.

In Question 10, 62.4% of respondents agreed and 11.1% of respondents strongly agreed that the top managements of their organizations maintain an organizational culture that emphasizes on the quality of construction works. Total percentage of respondents who either agreed or strongly agreed to this question is 73.5%.

The results reflect that most of the top management of construction organizations are having positive attitudes towards changes for quality management implementation.

7.6 Resources allocation

Questions on the construct of resources allocation are Questions 11 and 12.

In Question 11, 51.3% of respondents agreed and 11.1% of respondents strongly agreed that the top managements of their organizations allocate sufficient human resources for quality management. Total percentage of respondents who either agreed or strongly agreed to this question is 62.4%.

In Question 12, 47.9% of respondents agreed and 9.4% of respondents strongly agreed that the top managements of their organizations allocate sufficient financial resources for quality management. Total percentage of respondents who either agreed or strongly agreed to this question is 57.3%.

The results show that resources allocation for quality management implementation needs to be increased.

7.7 Summary

Table 5 and 6 show the items on top management commitment on quality management implementation which were rated either "Agree" or "Strongly Agree" by at least two thirds of respondents and less than two thirds of respondents respectively. From the two tables, it is indicated that all items for the constructs of quality goals, efforts, involvement, and attitude to change were rated either "Agree" or "Strongly Agree" by at least two thirds of respondents. However, all items for the constructs of priority and resources allocation were not rated either "Agree" or "Strongly Agree" by at least two thirds of respondents. The results show the top managements of construction organizations are committed to quality management but subject to the consideration of the factor of cost. The factor of time is indirectly related to cost as delay in the construction schedule of a project would bring financial loss to the project. Similarly, Rwelamila *et al.* (1995) described that in the construction industry, attention has been given to the elements of time and cost with little recognition to the importance of the aspect of quality.

Top Management Commitment on Quality Management Implementation (Total Respondents: 117)		0		1		2		3		4		5	
		Not Answered		Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Clearly identify project quality goals for project management team to achieve.	0	0.0	2	1.7	2	1.7	16	13.7	72	61.5	25	21.4
2.	Ensure that project quality goals are known to every member of the project management team.	0	0.0	2	1.7	2	1.7	14	12.0	75	64.1	24	20.5
3.	Treat quality as being more important than cost.	0	0.0	2	1.7	23	19.7	39	33.3	43	36.8	10	8.5
4.	Treat quality as being more important than time.	0	0.0	3	2.6	25	21.4	44	37.6	40	34.2	5	4.3
5.	Ensure continuous efforts in enhancing the quality of construction works.	0	0.0	1	0.9	1	0.9	19	16.2	78	66.7	18	15.4
6.	Always source for new ideas to enhance quality of construction works.	0	0.0	1	0.9	1	0.9	21	17.9	72	61.5	22	18.8
7.	Involve frequently in the quality management process.	0	0.0	1	0.9	3	2.6	33	28.2	66	56.4	14	12.0
8.	Personally involved in the quality management process.	0	0.0	1	0.9	5	4.3	26	22.2	66	56.4	19	16.2
9.	Strong willingness to change current work procedures to conform to the requirements of quality system.	1	0.9	1	0.9	5	4.3	24	20.5	68	58.1	18	15.4
10.	Maintain an organizational culture that emphasize on the quality of construction works.	1	0.9	1	0.9	4	3.4	25	21.4	73	62.4	13	11.1
11.	Allocate sufficient human resources for quality management.	1	0.9	1	0.9	11	9.4	31	26.5	60	51.3	13	11.1
12.	Allocate sufficient financial resources for quality management.	1	0.9	1	0.9	9	7.7	39	33.3	56	47.9	11	9.4

Table 4: Top Management Commitment on Quality Management Implementation

Construct	Question	Agree and Strongly Agree (%)
Quality goals	Clearly identify project quality goals for project management team to achieve.	82.9
Quality goals	Ensure that project quality goals are known to every member of the project management team.	84.6
Efforts	Ensure continuous efforts in enhancing the quality of construction works.	82.1
Efforts	Always source for new ideas to enhance quality of construction works.	80.3
Involvement	Involve frequently in the quality management process.	68.4
Involvement	Personally involved in the quality management process.	72.6
Attitude to change	Strong willingness to change current work procedures to conform to the requirements of quality system.	73.5
Attitude to change	Maintain an organizational culture that emphasize on the quality of construction works.	73.5

Table 5: Top Management Commitment on Quality Management Implementation Rated “Agree” or “Strongly Agree” By At Least Two Thirds of Respondents

Construct	Question	Agree and Strongly Agree (%)
Priority	Treat quality as being more important than cost.	45.3
Priority	Treat quality as being more important than time.	38.5
Resources allocation	Allocate sufficient human resources for quality management.	62.4
Resources allocation	Allocate sufficient financial resources for quality management.	57.3

Table 6: Top Management Commitment on Quality Management Implementation Not Rated “Agree” or “Strongly Agree” By At Least Two Thirds of Respondents

8. CONCLUSIONS

It is found that the top management of construction organizations are generally committed to quality management implementation from the perspectives of quality goals, efforts, involvement and attitude to change. Nevertheless, there are some areas which need to be improved. Firstly, quality is still lacking in terms of its importance in the mentality of the top management compared to cost and time. It is evident from the fact that most construction organizations are reluctant to sacrifice both finance and time for the sake of quality. Secondly, resources allocation should be further increased to a more satisfactory level.

The findings of this research should be looked seriously as they provide a potential explanation to the series of quality problems in the local construction industry. It is recommended the top management of construction organizations should change their mindset and give more priority to quality in project management.

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