



An Assessment of Knowledge Transfer Practices for Malaysian Construction Firm

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ABSTRACT

The aims of this paper are to identify the main factors driving or hindering knowledge transfer practice in the Malaysian construction firm. With extensive knowledge transfer theoretical perspective guides, 17 factors are identified as the key variables that influence construction firm performance for knowledge transfer effectiveness. A mixed methodology approach was employed with qualitative data collected through semi-structured interviews and quantitative data collected through questionnaire survey of the Malaysian contractors. A survey among 151 respondents including a different contractor registration grade was employed for the study. The survey shows that a 17 factors known as creating shared awareness for information sharing, communication, personal skills, individual attitude, training, organizational culture, information technology, motivation, monitoring and supervision, service quality, information accessibility, information supply, socialization process, knowledge tools, coaching and monitoring, staff briefing and information sharing were identify as a key dimension for knowledge transfer success. This finding suggest that through improvement of each factor, the recognition of the whole strategic knowledge transfer process can be increase thus helping to strengthen the Malaysian construction organization for competitive advantages.

Keywords: Knowledge Transfer, Organizational Performance, Construction

JEL Classifications: O35, R10

1. INTRODUCTION

The problem of poor project performance is commonly highlighted by the failure of a contractor to deliver the project within an appropriate time, cost and quality parameters (Atkinson, 1999; Enshassi, 1997). Many construction organizations have struggled with the issue of poor management and lack of technical performance (Hamid, 2009) which lead to poor construction quality, defects, poor site practice and a poor image of the construction organization and the industry (Al-Hammad et al., 1997; Djebarni and Eltigani, 1996; Zaidi and Davies, 2011a). In Malaysia, such problem including

lack of monitoring and supervision, poor service quality, lack of information sharing, lack of enforcement action are the common causes raised by many scholars to highlight the issue and key challenge for construction organization to success (Fong and Lee, 2009; Kadir et al., 2005). Based on issues obtained from the literature and study field, this paper presents findings on a key dimension of knowledge transfer success through discussion of the followings:

- The difficulties, challenges, and common problems and experiences faced by construction organizations.
- The key dimensions of knowledge transfer for improving organization performance.

A review of the current practice of knowledge transfer among construction organization will be pointed out in order to provide more clarity on the significance of knowledge transfer creation in organizational practices.

2. PROBLEM REVIEW

The registration of builders or contractors in Malaysia is managed by the Construction Industry Development Board (CIDB) and the Malaysian Contractors' Service Centre (PKK) which are placed under the Ministry of Public Works. It is mandatory for all contractors, whether local or foreign, to be registered with the CIDB of Malaysia. Based on contractor registration records at the CIDB, a total of 63,977 contractors including 164 foreign contractors were registered as at December 2008. Of this figure, 65% were small contractors registered under G1 and G2 grades which were qualified to participate in tendered projects valued at MYR 500,000 and below. In addition, a total of 22,401 contractors were registered under registration Grades G3 to G7. From all the registered contractors, 3,804 including 31 foreign contractors had succeeded in securing contract works as main contractors in 2008 (Shaffii, 2009). Kamarani (2002) stated that, the construction organization faces serious problems in improving its performance. The low productivity of the average worker due to a lack of skills and knowledge was seen as a critical challenge which the Malaysian construction sector needs to address (Kadir et al., 2005; Nima et al., 2001). A study conducted by Said et al. (2009) on common problems and factors faced by the Malaysian contractor highlighted that issues found to be a key contributor for the poor performance of the contractor included conflict between the contractor and other stakeholders (designer and client), quality problems and delays in commencing works due to underestimating the time needed to obtain statutory approvals. Another local study by Ibrahim et al. (2010) on the status of the Malaysian construction industry highlighted serious problems such as low quality, low productivity, delays, shortage of manpower and lack of data and information.

Knowledge transfer is one of the most important stages of the knowledge management process. It is one of the activities that constitute knowledge work in knowledge management assessment and it is a fundamental component in the knowledge management approach (Fong and Lee, 2009). In Malaysia, however, lack of sharing and transferring of knowledge have been found to be the main causes of poor project quality by the contractor (Low, 2007; Zaidi et al., 2009). Sharing and transferring of knowledge between contractors and information provider agencies such as the authority body, research institutions and construction industry board are not sufficiently achieved in practice (Zaidi and Davies, 2009; Zaidi and Davies, 2010). In response to this, it is argued that an effective attempt is needed to determine the contributory factors for effective knowledge transfer in the construction industry.

3. METHODOLOGY

It has been argued that the most appropriate approach for this kind of research is a mixed approach combining both qualitative

and quantitative methodologies. In the first stage, semi-structured interviews were conducted with related construction firm in Malaysia, the main thrust being to draw out the key factors that contributed to the challenges of knowledge transfer practices faces by the Malaysian builders. 13 interviews (R1-R13) were conducted with experience practitioners representing construction firm with an average more than five years working experiences. To facilitate the analysis, the thematic analysis technique was employed for coding, organizing, linking and exploring the transcript for themes and sub themes in lines the analysis guide.

The second stage that was the quantitative phase involved a survey research design based on findings from the literature and interviews. It was design to provide a numeric description of trends, attitudes or opinions of respondents. The questionnaire was conducted on a sample of drawn from a database of contractor listed in the CIDB Malaysia. A total of 500 questionnaires were mailed out to participants for completion. A descriptive technique was adopted to validate the factors for constructing a key dimension of knowledge transfer process. It was design to provide a numeric description of trends, attitudes or opinions of respondents. The questionnaire was conducted on a sample of drawn from a database of contractor listed in the CIDB Malaysia. The full-scale survey was conducted among various respondents that include a technical construction personnel from construction organizations. A total of 500 copies of the questionnaire were delivered to potential respondents (builders' Grades A-D) by mail and email. Approximately 6 weeks were allowed for the respondents to complete and return the questionnaire. Questionnaires could be returned by mail, email and fax. In all, 176 copies of the questionnaire were received. However, only 151 were valid for analysis. The response rate was 30.20%, which was consistent with the norm of 20-30% for most questionnaire surveys in the construction industry (Yang et al., 2010).

4. RESULTS

4.1. Stage 1: The Interviews

The analysis of the field data from the semi-structured interviews identified 9 categories of knowledge transfer factors that affect construction organization performance. These factors were, (1) Poor attitude of workers, (2) lack of communication, (3) skills issues, (4) commitment problems, (5) lack of training, (6) poor use of information technology, (7) lack of monitoring and supervision, (8) poor service quality and (9) lack of information supply. In all, 17 factors were recognized based on outcomes that were compiled from the comprehensive literature review and the interviews. The various raised dimensions raised by the interviewees relating to such behaviors are summarized in Table 1.

Respondents comprised 151 industry personnel working with construction organizations in Malaysia consisting of 71 Classes A builders, 33 Class B builders, 25 Class C builders and 22 Class D builders. Respondents had relevant experience of between 6 and 20 years. The majority of the respondents were engineers, 31.8% of the total number of respondents. Tables 2 show the demographic information about the respondents.

Table 1: Summary of the factors affecting knowledge transfer in the construction firms

Coding	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13
F1	√	√	√	√	√	√	√	√	√	√	√	√	√
F2	√	√	√		√				√				√
F3		√	√			√				√			√
F4	√			√	√		√	√	√	√	√	√	
F5				√	√	√	√	√	√	√	√	√	√
F6	√	√		√	√	√	√			√	√		
F7	√		√					√	√			√	
F8	√		√		√		√			√			√
F9	√	√	√	√	√	√	√	√	√	√	√	√	√

F1: Attitude problem, F2: Communication issue, F3: Skills issue, F4: Lack of commitment, F5: Training issue, F6: Application of IT, F7: Monitoring and supervision, F8: Poor service quality, F9: Lack of information supply

Table 2: Descriptive statistics of organizations' background

Registration grade	Frequency	Valid (%)	Cumulative (%)
Class A	71	47.0	47.0
Class B	33	21.9	68.9
Class C	25	16.6	85.4
Class D	22	14.6	100.0
Total	151	100.0	

Table 3a and b show the ratings for each factor from construction organizations' perspectives using the rating scale from (1) "strongly disagree" to (5) "strongly agree." These Table 3a and b present the mean value of responses obtained for each factor, indicating that all knowledge transfer factors have a strong level of agreement amongst every registered builder.

5. INTERACTION DESIGN

The ranking of factors was carried out on the basis of their mean values. The higher the mean value, the higher the rank would be and vice versa [16]. Table 3a and b tabulated the ranking of the factors from the different groups of builders. As shown, all the mean values are more than 3 which indicate that all of these factors are regarded as critical for the effectiveness of knowledge transfer in the construction organization. An apparent finding from Table 3a and b is that no matter what class of builder, the factor with "personal skills," "communication," "individual attitude" and "creating shared awareness for information sharing" was ranked the highest among all the factors. The highest rank was recorded for "personal skills" (F3), followed by communication (F2), individual attitude (F4) and creating shared awareness for information sharing (F1). This means that most construction professionals considered that factors that dealing with the personnel characteristics were the most important dimensions for knowledge transfer effectiveness. Based on the overall mean, the result of the analysis showed that "motivation" (F8) was the fourth rank in the knowledge transfer component, followed by "information technology" (F7), training (F5) and organizational culture (F6). The socialization process (F11), knowledge tools (F12) and information supply (F10) were ranked tenth, thirteenth and fifteenth respectively. The descriptive analysis also revealed that the internal transfer of knowledge within construction organization was achieved through coaching and mentoring, staff briefing and information sharing which was ranked as the lowest

component by the respondents. Interestingly, information sharing (F17) was found to be more important as it was ranked seventh by the survey respondents. Among the factors, there are three factor were indicated as the least important element influencing knowledge transfer. This factor which includes information accessibility (F11), monitoring and supervision (F9) and service qualities (F10) was ranked eleventh, sixteenth, and seventeenth by the respondents.

6. CONCLUSIONS

In determining which of the factors most influences knowledge transfer, the descriptive technique of evaluating the mean frequencies was conducted. The average mean value for the scores indicates that the majority of respondents agreed on all factors listed in this study. The respondents believe that these factors are important for their organization in order to improve knowledge transfer whereas the results presented the average mean value between 3.84 and 4.21. By employing a descriptive technique, the 17 identified factors for knowledge transfer are further ranked according to the average mean scores perceived by construction professionals. The results indicate the ranking as follows: Personal skills [1], communication [2], individual attitude [3], motivation [4], information technology [5], creating shared awareness for information sharing [6], information sharing [8], training [9], socialization [11], staff briefing [12], knowledge tools [13], coaching and mentoring [14], information supply [15], monitoring and supervision [16] and service quality [17]. In addition, the test also found that a factor related to the staff or personnel characteristic was the top-ranked and therefore most influential knowledge transfer success factors. In summary, these findings suggest the following:

- Factors that include creating shared awareness for information sharing, communication and personal skills are the top three essential criteria that need to be prioritized by any construction organization in implementing an effective knowledge transfer process.
- However, it will be much more effective if other knowledge transfer components such as organizational culture, service quality, information accessibility, information supply, coaching and mentoring, socialization process, knowledge tools, staff briefing and information sharing, are integrated as well in order to shape the best techniques for knowledge transfer implementation.

Table 3a: Survey results

Factor	Mean value				Overall mean	Overall rank
	Class A	Class B	Class C	Class D		
F1	4.0845	4.0303	4.2000	4.1818	4.1242	6
F2	4.2113	4.0606	4.3200	4.1364	4.1821	2
F3	4.1549	4.2424	4.3200	4.1364	4.2134	1
F4	4.1972	4.0909	4.1200	4.2273	4.1589	3
F5	3.9437	4.0303	4.2000	4.0455	4.0548	8
F6	4.0141	3.9394	4.2400	4.000	4.0484	9
F7	4.0704	4.1212	4.2800	4.0909	4.1406	5
F8	4.2535	4.2121	3.9200	4.2273	4.1532	4

F1: Creating shared awareness for information sharing, F2: Communication, F3: Personal skills, F4: Individual attitude, F5: Training, F6: Organizational culture, F7: Information technology, F8: Motivation

Table 3b: Survey results

Factor	Mean value				Overall mean	Overall rank
	Class A	Class B	Class C	Class D		
F9	3.9014	3.9697	3.8400	3.8636	3.8937	16
F10	3.9437	3.7879	4.0000	3.6364	3.8420	17
F11	4.0423	4.000	4.1600	3.9545	4.0392	11
F12	3.9718	4.0606	4.2800	3.8636	4.0440	10
F13	3.9577	3.9394	4.0800	3.8636	3.9602	15
F14	4.1127	4.0000	3.9200	4.0000	4.0082	13
F15	4.0141	4.0000	3.8000	4.0455	3.9649	14
F16	3.9859	4.0000	4.0800	4.0000	4.0165	12
F17	4.0704	4.1515	4.2000	4.0000	4.1055	7

F9: Monitoring and supervision, F10: Service quality, F11: Information accessibility, F12: Socialization process, F13: Information supply, F14: Knowledge tools, F15: Coaching and mentoring, F16: Staff briefing, F17: Information sharing

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