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Key Success Factors affecting Knowledge Management Implementation in Construction Industry in Libya

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Abstract: Knowledge Management (KM) has recently played a significant role in many organizations, particularly construction industry. There are many challenges influencing knowledge sharing and implementation due to the steadily increasing speed with which new technologies are evolving. These always require new or updated knowledge and allow new working practices. The purpose of this paper is to identify the relevant key success factors that affecting KM implementation in the construction industry in Libya. Based on the finding of the literature, a model of a key success factors is proposed and validated. Top management support, knowledge sharing were found significant predictors of knowledge management implementation. These findings could provide some implications for the practitioners and researchers that are interesting in the KM implementation and for KM system design.

Key words: Knowledge Management, key Success Factors, Knowledge Management Implementation, Model Validation, System Design.

INTRODUCTION

Knowledge Management (KM) has recently played a significa nt role in many organizations (Yip et al., 1991).Many factors affecting successful implementation of KM have been identified in previous research (see Lin & Tseng 20005; Chong, and Choi, 2005; Chong, 2006). Effective knowledge deployment and management are important element in today's knowledge base economy particularly construction industry.

Management has long mentioned the value of KM in solving business problems. It is widely believed that enterprises are increasingly competing based on their ability to effectively create and utilize knowledge. Even though, numerous challenges remain for firms seeking to implement a Knowledge Management System. This paper provides a literature review based mainly on the KM literature with the intention of identifying the soft element of successful KM implementation to develop and validate a model of KM that represents the key factors that affect KM implementation in construction industry in Libya.

Literature Review and Hypothesis Development:

The transition to the knowledge based economy, the design and functioning of the knowledge based organization it is impossible without a knowledge based management (Cristina, 2009). Based on the KM literature and KM implementation previous models, an integrated model of a successful KM implementation was developed (see Figure 1).The framework consists of four dimensions, including organizational factors, individual factors, technological factors and KM related factors. We suggest these factors should be considered in the successful KM implementation in construction industry in Libya.

The organizational aspect represents the internal factors that affect the construction industry in Libya. According to prior studies, we suggested three factors should be considered in the successful KM implementation including the top management support and organisational culture.

The individual aspect represents the internal factors that affect the construction industry in Libya. Similarly, According to prior studies we propose three factors should be considered in the successful KM implementation including the training, knowledge sharing culture, and motivation to share knowledge.

KM factors are those internal and external aspects that influence KM in the construction industry in Libya. Based on previous studies, we propose three factors should be considered in the successful KM implementation including the training, knowledge sharing culture, and motivation to share knowledge. Based on the literature review the following hypotheses were derived. Table 1 below shows these hypotheses with its support from previous studies.

Survey and Results:

Survey Procedure:

A questionnaire survey was used for collecting the data. The survey instrument was developed based on the previous measurement from literatures review. A five-point Likert scale is deployed for measuring the extent of agreement or disagreement on each item, where1 represents "strongly disagree" and 5 represents "strongly

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agree". Before final study instrument, the items were investigated by two KM experts for validity. A pilot survey with 3 employees in a construction industry was conducted to reduce the possible unclear statements of questionnaire. A total of 250 questionnaires were distributed to construction industry staff in Libya.

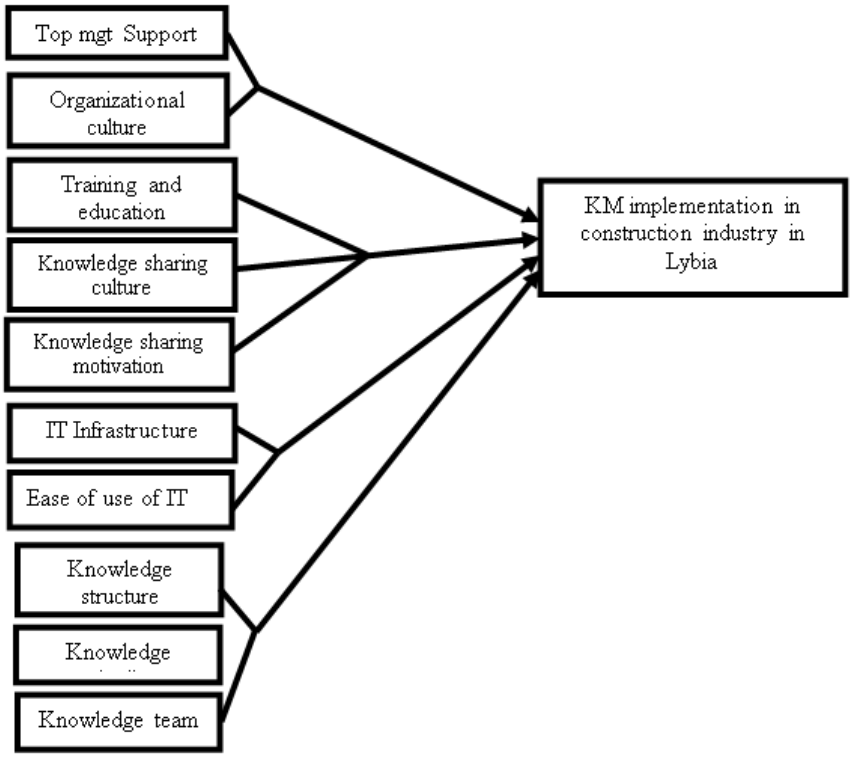

Fig. 1: Proposed model.

Table 1: Summary of Hypotheses in the Proposed Model.

Hypothesis	Construct	Expected Relationship & supportive literature
Organisational		
H1	Top management support	There is a positive relationship between top management support and KM successful implementation.(Akhavan, *et al.*, 2006)
H2	Organizational culture	There is a positive relationship between organizational culture and KM successful implementation. (Ryan and Prybutok (2001)
Individual		
H3	Training and education	There is a positive relationship between Training and education and KM successful implementation (Moffett et al. , 2003).
H4	Knowledge sharing culture	There is a positive relationship between Knowledge sharing culture and KM successful implementation. Hasanali, 2002)
H5	Knowledge sharing motivation	There is a positive relationship between Knowledge sharing motivation and KM successful implementation.
Technological		
H6	IT infrastructure	There is a positive relationship between IT infrastructure and KM successful implementation (Alavi (1999) ; Lee and Hong (2002).
H7	Ease of use	There is a positive relationship between IT ease of use and KM successful implementation(Hasanali, 2002)
KM factors		
H8	Knowledge audit	There is a positive relationship between knowledge audit and KM successful implementation.
H9	Knowledge structure	There is a positive relationship between knowledge structure and KM successful implementation.
H10	Knowledge team	There is a positive relationship between knowledge team and KM successful implementation.

Demographics:

There were 250 responses coming from construction industry staff who are concerning with KM implementation, of which 163 were completed and usable for the purpose of the analysis, yielding an effective response rate of 65. %(163/250). In the response company, 44.8% of the respondents age ranging from (41-55) years, A majority of the respondents were managers (45%), worked in the private sector (74%), had diploma or bachelor degree qualifications (50%), and more than 50% from the respondents working experience was ranging from (6-10) years.

Validity and Reliability:

Each item in the questionnaire was adapted from the prior literature to ensure the validity and reliability. Therefore, as table 1 below shows, all value of Cronbach's α of the construct was higher than the threshold level of 0.7 which was said to be satisfactory reliability (Nunnally, 1978). Altogether, it was concluded that all the scales used were acceptably reliable.

Table 2: Measurement reliability.

Construct	Cronbach's Alpha α	No of items
B1:top management support	0.904	6
B2: organizational culture	0.885	8
B3:training and education	0.861	6
B4: knowledge sharing culture	0.772	4
B5: Motivation to share knowledge	0.840	5
B6: IT infrastructure	0.837	6
B7: Ease of use	0.923	5
B8:knowledge audit	0.688	5
B9: knowledge structure	0.831	5
B10: knowledge team	0.868	5
C1: KM successful implementation	0.922	7

Hypotheses Testing:

The unit of analysis is individual employees in the construction industry in Libya. There was a no problem of insufficient sample size in order to validate the hypothesized model using all 11 independent variables. The results of the analysis are presented in Table 2.

Table 3: Summary of overall research hypotheses.

Hypothesis	t- value	P-Value (Sing)	Result
H1: top management support	5.718	0.000	Supported
H2: organizational culture	-.047	0.000	Not Supported
H3: training and education	0.962	0.000	Supported
H4 :knowledge sharing culture	3.799	0.000	Supported
H5 :Motivation to share knowledge	-2.349	0.020	Not Supported
H6 :IT infrastructure	1.307	1.92	Not Supported
H7 :Ease of use	1.689	0.029	Supported
H8: knowledge audit	1.567	0.022	Supported
H9 : knowledge structure	-0.193	0.847	Not Supported
H10 knowledge Team	4.657	0.000	Supported

Discussion:

The data analysis shows that seven out of ten predictors of KM were found have a major effect on the decision of successful KM implementation in the construction industry in Libya. In line with previous KM literature, top management support, training and education, knowledge sharing culture, ease of KM use and all KM related factors were found to be positive predictors of KM implementation.

Organizational Culture does not have a statistically significant effect on the successful KM (Table 3).

In addition, these results show that organizational culture factors have no significant relationship with the use of KM tools in construction industry in Libya. This may be due to the fact that this industry is very bureaucratic. Consequently, it is hard to motivate employees to share knowledge as indicated by the negative relationship between the independent variable motivation to share knowledge and the dependent variable KM implementation.

From the empirical work done, an observation can be made that KM web-based system is highly recommended to solve the problem of lack of motivation of knowledge sharing , lack of knowledge infrastructure in construction industry in Libya. This system will be proposed in work in progress.

Conclusion:

The purpose of this study is to examine the critical factors that may affect the KM implementation in the construction industry in Libya. Based on a survey with 163 targeted staffs the analysis revealed that the KM

related factors were significantly associated with successful KM implementation. These findings could provide some meaningful implications for the practitioners and researchers that are interesting in KM system design in construction industry.

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