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Overcoming Knowledge Management Success Issues by Utilizing IS Theories

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Overcoming Knowledge Management Success Issues by Utilizing IS Theories

An imperial Study in Oil and Gas Industry; Saudi Arabia

Completed Research Paper

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Abstract

The study aims to examine factors that are influencing knowledge management success in one of the leading company in oil and gas industry in Saudi Arabia. It equally evaluates and validates a new proposed framework Information System Technology Acceptance Model (ISTAM) by combining two previously validated information system questionnaires. Data were collected from 401 employees of an oil and gas company in Saudi Arabia by adopting simple random sampling technique. Confirmatory factor analysis was used to measure and validate the hypothesized model while Structural Equation Modeling (SEM) and AMOS were used to test the highlighted hypothesis. The major findings which can be deduced from the overall results of the study is that, IS theories' underline's construct and components fitted well in overcoming knowledge management success challenges. This result practically states that, IS theories as embedded in the KM model can suitably bring about knowledge management success in corporate organization.

Keywords: knowledge, Saudi Arabia, KSA, ISTAM, TAM, D&M IS, model

Introduction

In today environment organizations and industries are facing a competitive environment characterized by the globalization of markets, increasingly complex business problems and the acceleration of change phenomena. Consequently, the traditional sources of competitive advantage, such as protected markets, and physical and financial assets, have lost importance compared to knowledge assets. This has contributed to the growing interest in the concept of knowledge management in the past two decades. Due to this, knowledge management is crucial for organizations and it is one of the strategic resources that an organization has to plan for carefully. Knowledge management is the most important concept that creates added values for organizations. Even, people, organizations and nations who use the knowledge strategically get an advantage against their competitors (Tıngoy & Kurt, 2009). Its role and importance in building for organizations' competencies has dramatically increased in the recent years (Rasmussen & Nielson, 2011).

Meanwhile, the importance of knowledge management in Saudi Arabia was clearly highlighted by many studies that were conducted to explore knowledge management in Saudi Arabia's firms in various sectors (Barclay & Murray, 2013). It was deduced from these previous studies that, most of the work is information based; organizations compete on the basis of knowledge; products and services are increasingly complex, endowing them with a significant information component which has made the need for life-long learning an inescapable (AlRoawaly & Alsadhan, 2012; Magd & Hamza, 2012; Riz, 2014; Al-Shammari & SamerKanina, 2014; Alsereihy, Alyoubi & El Emary, 2012; Zahr, 2012).

Since the importance to manage knowledge has being highlighted in the past studies, it is pertinent to explain its importance to the oil and gas industry in Saudi Arabia. It is a fact that, the oil and gas company is one of the leading service providers in Saudi Arabia in the areas of refineries, power

generation and water treatment. The company is striving to provide the best services as possible with high concern to quality and safety. In this regard the company needs the best intellectual assets both recorded and personal in terms of knowledge management that will engender positive business result. Therefore, the organization could be able to sustain the laudable services it provides to the entire Kingdom of Saudi Arabia (KSA).

Problem Statement

The challenges of oil and gas companies in Saudi Arabia, ranges from, the shift supply-demand fundamental, emerging new trading patterns which has made the influence of these dominant oil and gas suppliers dropping in Saudi Arabia Society. This consequently allows the alternative producers to gain market share (Oil and Gas Reality Check, 2015). In view of this, the corporate organization needs strategies, policies and tools to manage its information and knowledge assets, which is otherwise known as knowledge management.

Therefore, in a bid to combat the big challenges facing the oil and gas corporate company it is necessary to provide a comprehensive knowledge management framework. This framework could assist to address the issues of internal management practice and consumers' disposition as it affects knowledge management success in corporate organization (López, Peón, & Ordás, 2009). Due to this, the study intends to examine the factors that are influencing knowledge management success in one of the leading company of oil and gas industry in Saudi Arabia. Moreover, the study will evaluate and validate a new proposed Information System Technology Acceptance ISTAM framework through quantitative questionnaire conducted in the company.

Research Questions

The main research questions are:

1. What factors influence success of knowledge management practice in the organization?
2. What are the underline constructs that determine knowledge management system success in the organization?
3. Does the ISTAM model address factors that affect knowledge management?

Research Objectives

The main aim for this research is to examine and evaluate knowledge management in the organization under study using a new proposed model for knowledge management success system. This is in order to improve knowledge management in the organization. The specific objectives are:

1. To identify factors that affect knowledge management success practice in the organization
2. To develop constructs that influence knowledge management system success and their relationships for the organization.
3. To verify fitness of the proposed ISTAM model to address factors affecting successful knowledge management practice in the organization?

Research Hypotheses

The research hypothesis is formulated based on the research objectives. The main interest here is to identify factors that influence the success of knowledge management system. Therefore; the research suggests the following hypotheses in order to validate and verify fitness of the proposed model Information System Technology Acceptance Model, ISTAM:

H1. Knowledge Management Contents Quality has a direct relationship with Perceived Ease of Use.

H2. Knowledge Management Contents Quality has a direct relationship with User Satisfaction.

H3. Knowledge Management System Quality has a direct relationship with Perceived Ease of Use.

H4. Knowledge Management System Quality has a direct relationship with User Satisfaction.

H5. Knowledge Management Service Quality has a direct relationship with Perceived Ease of Use.

H6. Knowledge Management Service Quality has a direct relationship with User Satisfaction.

H7. User Satisfaction is an ultimate stimulus to KMS Success.

Literature Review

Information Systems Models and Theories

Before exploring knowledge management, it is important to understand Information System (IS) as knowledge management is a class of it. Information systems are the technical enablers and medium to host, share and manipulate information and knowledge in organizations, therefore; many studies were carried out on developing models and theories to explain and define information systems. This is in order to implement successful information systems for organizations. Various aspects that influenced IS success were examined and sometimes empirically tested. Many models and theories such as Deleone and McLean Information System D&M IS success model, Technology Acceptance Model TAM, Diffusion of Innovation DOI and Technology-Organization-Environment TOE are considered in this segment.

Delone and McLean Information System Success Model (D&M IS)

DeLone and McLean reviewed the existing definitions of information systems success and their corresponding measures in various aspects in 1992. They reviewed 180 research studies in order to provide a more comprehensive and broad definition for information system success and get accurate corresponding measures (Halawi, et al. 2007). They classified information system success into six major categories. Thus, they created a multidimensional measuring model with interdependencies between the different success categories (DeLone and McLean, 1992). DeLone and McLean model originally consists of six interrelated dimensions: (1) System Quality, (2) Information Quality, (3) System Use, (4) User Satisfaction, (5) Individual Impact and (6) Organizational Impact. DeLone and McLean motivated other researches to further test and validate their models; hence many empirical tests of the model were conducted by various researchers to extend or to critique and challenge the original model or even to completely reformulate it.

Ten years later, after the publication of their first model, based on the evaluation by many contributors, DeLone and McLean updated their D&M IS success model (DeLone & McLean, 2003). Most of the feedback for the original model came from Peter Seddon (Seddon, 1997) who suggested a re-specification and extension of D&M IS Model. The updated model also consists of six interrelated dimensions: (1) Information Quality, (2) System Quality, (3) Service Quality, (4) Intention to Use or Use, (5) User Satisfaction and (6) Net Benefits. Figure 1 shows the new updated D&M IS model. The new constructs in the update version are the enhancement of model categories' measures and associations of arrows that are proposed between dimensions. The updated model proposed that a system is evaluated in terms of Information Quality, System Quality and Service Quality; these features will have subsequent effect on the Intention to Use or Use and User Satisfaction of the system. Based on, using the system and user satisfaction, Net Benefits will be achieved.

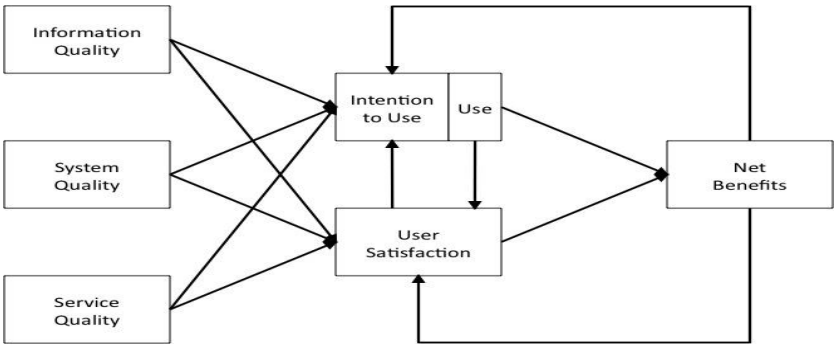

Figure 1. Updated D&M IS success Model, Source: (DeLone & Mclean, 2003)

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one of the models that have been attracting a lot of researchers' attentions since the last twenty years. TAM is concerned on how user is willing to accept and use technology. TAM captured most of the community of is systems attention (Chauttur, 2009). The first appearance of TAM was seen in Fred Davis's doctorate thesis at MIT Sloan School of Management in 1985. Davis proposed that Actual System Used is the response that can be explained or predicted by user organism of user's motivation to use the system's ability which, in turn, is directly influenced by an external stimulus consisting of the actual system's features and capabilities (Davis, 1985).

Five years later, Davis refined his own Technology Accepted Model (TAM) conceptual model and proposed a more comprehensive one relaying on previous studies and researches specifically Theory of Reasoned Action (TRA) which was developed by Fishbein and Ajzen in 1975 (Davis, 1989). Figure 2 is the refined version of TAM. TAM identifies three factors that determine user motivation to Actual System Use of technology. These factors are Perceived Ease of Use, Perceived Usefulness and Attitude towards Using. These factors will ultimately be influenced by system design characteristics (Chutur, 2009).

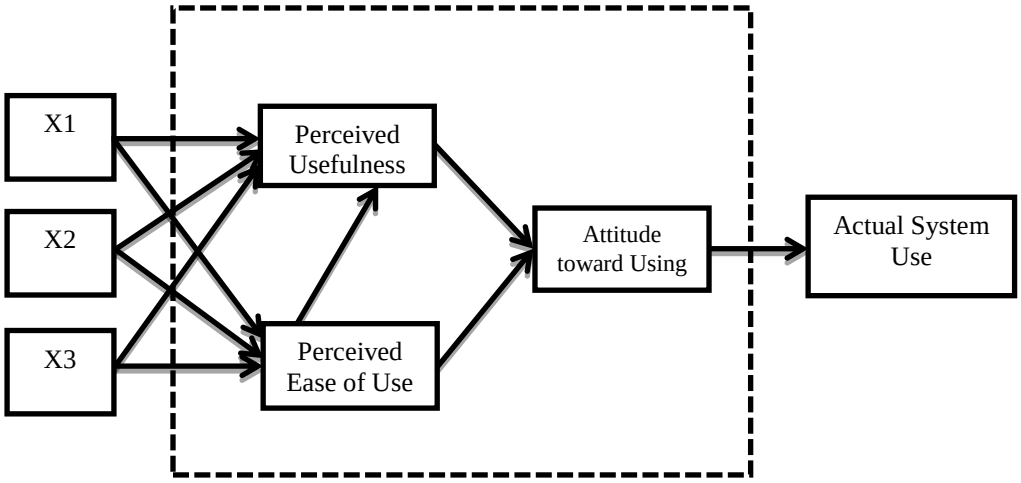

Figure 2. Updated Technology Accepted Model, Source: (Davis, 1989)

Knowledge Management

Knowledge Management (KM) is a class of Information System (IS) that provides support to the organizational process of knowledge to enhance internal and external knowledge of the organization (Wu & Yu, 2006). KM is very crucial for any organization to enable it to compete in the market place and have its desired share. It bridges the gap between organization contexts and its strategy (Zheng, et al. 2010). However, using technology alone without employing the comprehensive knowledge management system to support knowledge sharing is not sufficient to reach the desired goals (Ryan, et al. 2010). Ali (2012) said "Knowledge is considered the most important strategic resource of insuring an organization's long-term survival and success" (Ali, 2012, p. 19). Therefore, knowledge management strategy for an organization must be clear and must consider peopleware and heartware - human resources loyalty and willingness - prior to knowledge management implementation (Noordin, 2011). Organizations' understanding on how to employ knowledge management and what tools and aids to use is essential for successful knowledge management (Ichijo & Nonaka, 2006). Most organizations do not have a clear vision of knowledge management, their definitions and roles in their own organizations, hence continue to lose expertise, experiences and knowledge assets. Moreover, this misconception will contribute to failure of KM projects and KM initiatives (Braganza, 2003).

Meanwhile, several studies have been conducted in Kingdom of Saudi Arabia (KSA) in different sectors on knowledge management. The objective of the present study has made it imperative to review these empirical studies. Firstly, (Alsereihy, Alyoubi, & Emary, 2012), conducted an empirical study to investigate the effectiveness of knowledge management implementation on improving the performance of some industrial and business organizations in KSA. Another similar study by (Alammary & Fung, 2008), equally explore the effectiveness of the alignment between knowledge strategy and business strategy which are the components of the main knowledge management system, both studies found that knowledge management have positive effect on the organization performance and improvement. In addition, another document research that was conducted by (Shafique, 2015) has highlighted the importance of knowledge management in higher institutions of KSA, while similar study by (Al-Rowaily & Alsadhan, 2012) explored the emerging role of knowledge management in Telecom sector and concluded that, knowledge management might not be effective unless all the stakeholders in an organization are highly concerned by involving and contributing to the implementation of knowledge management. However, it was found by (Azyabi & Fisher, 2014), that the exploitation orientation of knowledge management is dominant among small and medium sized enterprises (SMEs). From those cited literatures it can be seen that, knowledge management

implementation is reported to be effective except in the aspect of SMEs which was reported as being exploitative towards knowledge management. However, those literatures did not address the issue of providing a framework or model of knowledge management in order for the corporation to work with its guidance.

Furthermore, other similar literatures were equally consulted. For example, (Alhamoudi, 2010), introduced and adapted balance score card in the model of knowledge management for public sector in Saudi Arabia. More so, (Magd & Hamza, 2012) proposed knowledge management system for SOFCON Consulting Engineering Company, while, (Almuayqil, Atkins, & Sharp, 2015), proposed knowledge management framework for E-health care in the KSA. From all these it can be seen that, the frameworks and models proposed for the organization are just the conventional knowledge management based frameworks or models except only the one that include balance score card. Therefore, most of the models and frameworks provided by the above mentioned literatures failed to consider the important aspect of knowledge management, which is managing knowledge effectively through information systems. In view of this, the present research intends to work on this in order to fill the gap by including IS theories in the knowledge management framework for oil and gas company in KSA.

Proposed Model

The proposed theoretical Information System Technology Acceptance Model (ISTAM) is an integration of two well-known IS models D&M IS and TAM. Although ISTAM is an independent and a new derivative of IS concerning knowledge management, yet it complements other earlier researches derivatives and frameworks in KM arena such as (Wu & Wang, 2006; Halawi, et al. 2007; Kulkari, et al. 2006; Lai, 2009). The model was based on the fact that KM is a class of IS therefore, it replaces: Information Quality, System Quality and Service Quality of the original D&M IS model by: Knowledge Content Quality, Knowledge System Quality and Knowledge Service Quality. In addition, it replaces the system design characteristics in TAM which are: X1, X2 and X3 by: Knowledge Content Quality, Knowledge System Quality and Knowledge Service Quality. Furthermore, additional mediator variable from D&MIS is added between Intention to Use / Use and KMS Success. Perceived Usefulness is impacted by Perceived Ease which in turn impact Intension to Use / Use as illustrated in Figure 3.

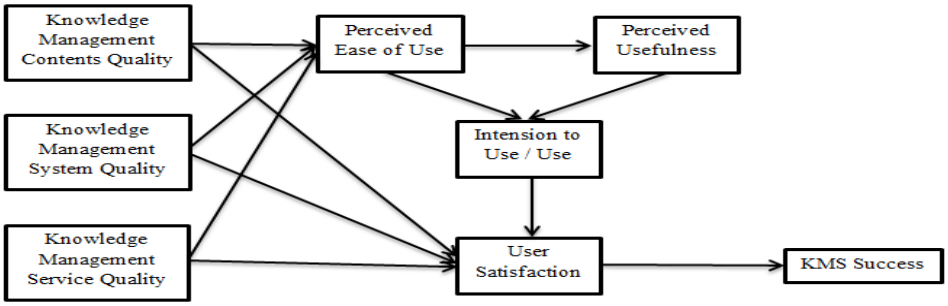

Figure 3. Information System Technology Acceptance Model ISTAM

Methodology

This study was conducted on an oil and gas company in the Saudi Arabia to examine knowledge management issues in the organization. Furthermore, it explores the impact of factors in knowledge management success. The organization population was 62,000 employees and population sample size was 401. This sample size exceeds required sample size for such population according to Krejcie and Morgan's (1970) which is 381. More so, the method used by the author was to select his sample is simple random sampling technique. This is a technique whereby the subjects are selected from the larger population. In this technique the subjects are chosen by chance and every subject has the equal chances of being selected (Creswell 2008). In the case of the present study, the researcher solicited the list of the entire population from the company. Then, he selected each subject randomly. Thereafter, he distributed the questionnaires to the chosen subjects from the population.

This study was conducted between February 1st and April 30th, 2016 using out of the box survey tool, in the form of electronic questionnaire. The questionnaire which was bilingual (Arabic and English) survey was distributed in either hardcopies then entered in the survey tool at a later time or as a web link through social media such WhatsApp, Facebook, email and many other forms of communication networks. The survey consisted of two parts, the first part was demographics and general information

about respondents in the form of multiple choice questions and second part was in the form of how much the individual agree or disagree with a specific statement using five-points Likert scale (strongly disagree, disagree, neutral, agree and strongly agree). The study was analyzed with four ready-made standard statistical tests instrument, descriptive analysis, Confirmatory Factory Analysis (CFA), Reliability and Validity Analysis and Regression Analysis (Pallant, 2007). Table 1, illustrated the instrument fit indices threshold that are used.

Table 1. Fit Indices Summary

Fit Indexes	Cut-off Points
P	< 0.5
CFI/TLI	> .90
RMSEA	< . 05 to .08
X2/df	< 3 to < 5
R2	>0.5
Eigenvalue	>1
KMO and Bartlett's test	> 0.6
Verimax rotation	>0.3
Cronbach's Alpha	>0.7

Source: Adapted from (Kline, 2015; Hair et.al, 2010; Pallant, 2007)

Descriptive Analysis

The total numbers of the participants who voluntarily respond to the survey are four hundred and one (401) respondents, out of which Saudis are 338 (84%) and foreigners are 63 (16%), males are 356 (89%) and females are 45 (11%). Most of the respondents were originally from the Eastern Region of Saudi Arabia, where the organization headquarters offices are located, which is more than half of the sample 173 (51%). Followed by the age of the respondents of which below 25 years old are 19 (5%), 26-35 are 123 (30%), 36-45 are 107 (27%) and 152 (38%) are above 40 years old. The education levels are; high school are 46 (11%), Bachelor are 239 (60%), Master are 104 (26%) and PhD holders are 12 (2.2%). Finally, the numbers of years of service; below 3 years are 80 (20%), 3-10 years are 90 (22%), 11-20 years are 95 (24%), 21-30 years are 79 (20%) and above 30 years are 57 (14%). In addition to the demographic question, twenty (20) questions were asked in from of how much the user agreed or disagree about certain statements. These set of questions were the main input for the research where various tools are used to measure and thereafter validate the ISTAM framework. The information can be viewed clearly from Table 2 below.

Table2. Descriptive Analysis Matrix

Demographic Information	Variables Names	Frequencies	Percentage	Total
Nationality	Saudis	338	84%	401
	Foreigners	63	16%	
Gender	Males	356	89%	401
	Females	45	11%	
Age	Below 25	19	5%	401
	26-30	123	30%	
	36-45	107	27%	
	Above 40	152	38%	
Education Level	High school	46	11%	401
	Bachelor	239	60%	
	Master	104	26%	
	PhD	12	2.2%	
Years of Service	Below 3 years	80	20%	401
	3-10 years	90	22%	
	11-20 years	95	24%	
	21-30 years	79	20%	

Statistical Analysis

The study highlighted four (4) constructs which serve as the background of the research. These are: Knowledge Management Contents Quality, Knowledge Management System Quality, Knowledge

Management Service Quality and Knowledge Management System Success. Many tests that were used are Confirmatory Factor Analysis (CFA), reliability and validity analysis. In addition, the study utilized advance statistical tool which is Structural Equation Modeling (SEM) and AMOS.

Confirmatory Factor Analysis (CFA) of knowledge management

The main aim of the Confirmatory Factor Analysis (CFA) in the present research is to measure the unidimensionality of the dimensions employed in the study. It is important evaluating and measure the model by using a variety of Goodness-of-Fit (GOF) indices (Byrne, 2001). The assessment of the model fit in this study was based on multiple criteria; the normed x2 or x2/df ratio, the Root Mean Square Error of Approximation (RMSEA) and Comparative Fit Index (CFI). Therefore, CFA was estimated on the 4 constructs presented by the study in order to ascertain the reliability and validity of these constructs in the research context. These four items are then collapsed into one item, Knowledge Management indicators. In order to demonstrate different kinds of construct validity, various types of validity terms could be used. The present research used convergent validity to specify the ability of the measurement items to perfectly measure the constructs of the study (Hair et al., 1995). SEM is a suitable statistical test to evaluate the construct validity by using convergent validity (Anderson & Gerbing, 1988). Convergent validity is achieved when the relationship between items and the construct is significantly different from zero. As a result of this criterion, critical ratios could be used to measure the statistical significance. Any parameter that has a critical ratio greater than 1 can be regarded significant based on the level of p=0.05 (Anderson & Gerbing 1988). Therefore, in the present research, all items measured accurately and represent their factors significantly, because the critical ratio of every item is more than 1, then it fulfills the convergent validity test. As a rule of thumb, the composite reliability should be greater than 0.7 and variance extracted to be greater than 0.5 to signify reliable factors (Hair et al., 1995; Holmes-Smith, 2001). Both the composite reliability as well as variance extracted to be calculated using Fornell and Larker's (1981) formula.

The assessment of knowledge management consists of four variables: Knowledge Management Contents Quality, Knowledge Management System Quality, Knowledge Management Service Quality, and KMS Success. The knowledge management indicator was estimated to assess it unidmensinality. The model fit in this estimation was based on multiple criteria; the normed x2 or x2/df ratio, the Root Mean Square Error of Approximation (RMSEA) and Comparative Fit Index (CFI), (Hair et al. 1995; Byrne, 2001; Holmes-Smith, 2001). However, some fit indices do not show good fit: chi-square = 556.430, df = 183, and p = 0.000. Nevertheless, Kline (2010) advised that in the situation where some fit indices do not fit with the data, the researcher should retain the model fit if the model is complex and has large number of sample (above 350). Due to this the present model is acceptable based on the complexity and the large number of respondents (401) used in the study. Figure 4 illustrate the CFA measurement and relationship between knowledge management indicators.

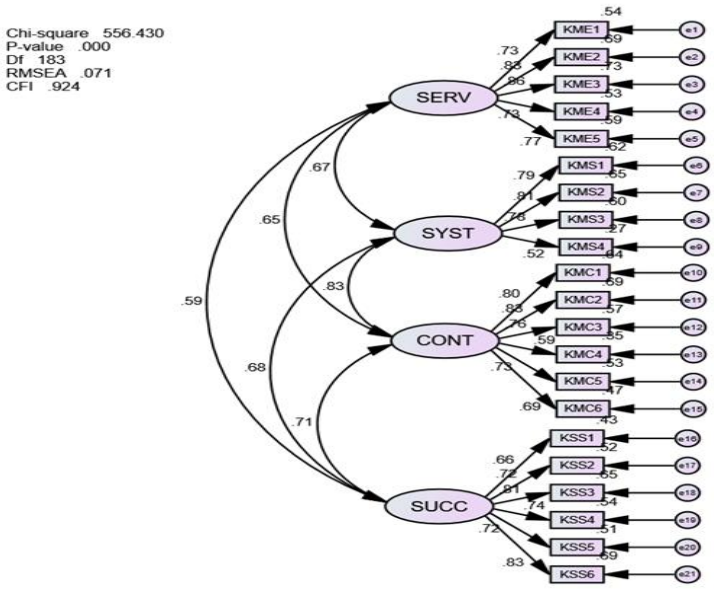

Figure 4. CFA Measurement and Relationship for Knowledge Management Indicators

Additionally, the remaining fit indices show goodness of fit value: RMSEA=.071 (below .08), CFI= .924 (above 0.90) which is ultimately showing a highly fit model. The C.R. values as well as p-values are used to determine a statistically significant test. Based on this, all the items in this model had C.R. > 1 showing that all the items are statistically significant. The loading or standardized regression weights of all the items were ranged between moderate and high loadings .70 to 85 as illustrated in Table 3 below.

Table 3. Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
KME1	<---	SERV	1.000				
KME2	<---	SERV	1.149	.071	16.206	***	par_1
KME3	<---	SERV	1.254	.075	16.707	***	par_2
KME4	<---	SERV	.988	.070	14.135	***	par_3
KME5	<---	SERV	1.050	.070	14.974	***	par_4
KMS1	<---	SYST	1.000				
KMS2	<---	SYST	1.047	.063	16.619	***	par_5
KMS3	<---	SYST	.994	.062	15.977	***	par_6
KMS4	<---	SYST	.878	.086	10.244	***	par_7
KMC1	<---	CONT	1.000				
KMC2	<---	CONT	1.015	.055	18.501	***	par_8
KMC3	<---	CONT	.880	.054	16.350	***	par_9
KMC4	<---	CONT	.748	.062	12.085	***	par_10
KMC5	<---	CONT	.905	.058	15.514	***	par_11
KMC6	<---	CONT	.892	.061	14.530	***	par_12
KSS1	<---	SUCC	1.000				
KSS2	<---	SUCC	1.182	.094	12.567	***	par_13
KSS3	<---	SUCC	1.255	.091	13.741	***	par_14
KSS4	<---	SUCC	1.194	.093	12.778	***	par_15
KSS5	<---	SUCC	1.040	.083	12.463	***	par_16
KSS6	<---	SUCC	1.328	.095	14.037	***	par_17

Reliability and Validity of the Knowledge Management

Cronbach Alpha coefficient, Composite Reliability, as well as variance extracted were estimated in order to measure the reliability of each factor. The Composite Reliability, variance extracted, and Cronbach Alpha coefficient values for all critical factors greatly exceeded the minimum acceptable values. This shows that measures were free from error, reliable, valid and therefore yielded very consistent results (Zikmund 2003). These results can be viewed from the Table 4 below.

Table 4. Composite Reliability and Variance Extracted for Each KM Factor

Variable Names/Items	Label	Loadings	Composite Reliability	AVE	Cronbach Alpha
KM Content Quality	SERV		0.876	0.544	0.933
KMC1		.80			
KMC2		.83			
KMC3		.76			
KMC4		.59			
KMC5		.73			
KMC6		.69			
KM System Quality	SYST		0.82	0.52	0.881
KMS1		.79			
KMS2		.81			
KMS3		.76			
KMS4		.52			
KM Service Quality	CONT		0.89	0.62	0.921
KME1		.73			
KME2		.83			
KME3		.86			
KME4		.73			
KME5		.77			

KM Success	SUCC		0.85	0.54	0.933
KMS1		.66			
KMS2		.72			
KMS3		.81			
KMS4		.74			
KMS5		.72			
KMS6		.82			

Results

The outcomes of the analysis were assessed in order to determine the relationships between all variables and the strength of each variable in predicting KMS success having achieved the acceptable estimate of best fit. Equally, the SEM analyses were used in seeking the answers to the research questions and afterward test the hypotheses of the present research. The outcomes of the estimation were arranged in following the sequence posed by the research as well as their respective hypotheses. The outcome for the paths analysis in the model is used to test research hypothesis as illustrated in Table 5. However, Table 6 illustrates summary of the hypothesis results.

Table 5. Regression Weights: (Group number 1 - Default model)

			SRW	S.E.	C.R.	P	Label
Per_Ease	<---	KM_Contents	.399	.045	8.084	***	
Per_Ease	<---	KM_System	.184	.069	3.627	***	
Per_Ease	<---	KM_Service	.218	.045	5.032	***	
Use_Satis	<---	KM_Contents	.370	.036	7.856	***	
Use_Satis	<---	KM_System	.110	.055	2.263	.024	
Use_Satis	<---	KM_Service	.318	.036	7.693	***	
KM_Success	<---	Use_Satis	.890	.052	22.706	***	

Table 6. Summary of the Hypothesis Results

No.	Hypothesis Test	Result
H1	Knowledge Management Contents Quality has a direct relationship with Perceived Ease of Use.	Supported
H2	Knowledge Management Contents Quality has a direct relationship with User Satisfaction.	Supported
H3	Knowledge Management System Quality has a direct relationship with Perceived Ease of Use.	Supported
H4	Knowledge Management System Quality has a direct relationship with User Satisfaction.	Supported
H5	Knowledge Management Service Quality has a direct relationship with Perceived Ease of Use.	Supported
H6	Knowledge Management Service has a direct relationship with User Satisfaction.	Supported
H7	User Satisfaction has a positive relationship with KMS Success.	Supported

Discussion

The major finding which can be deduced from the overall result of the present study is that, IS theories underline's construct and components fitted well in overcoming knowledge management success challenges. In essence, the result states that, IS theories as embedded in the KM model can suitably bring about knowledge management success in corporate organization. In view of this, the present study proposed that, ISTAM could suitably assists the oil and Gas companies in KSA to overcome knowledge management issues and challenges as was highlighted from the problem statement. This is because, IS ensures and enhances competitive advantages (Xu & Quaddus, 2010), serves as strategic partner that ensure greater productivity (Gaines, Hoover, Foxx, Matuszek, & Morrison, n.d.) and enhances better communications by supporting decision makings (Basahel, 2010). Therefore, the management and other stakeholders in the oil and gas organization should be highly concerned, sensitive and ready to adopt ISTAM model as template and framework of operation in their corporation.

Conclusion

Based on the outcome of the study the proposed model of the study fit the data well. Meaning that, it is workable and can be practically applied in the organization. This is the combination and integration of both D&M IS and TAM models in ISTAM. It states that, the combination and integration of the models could bring about KM success in the organization. Meanwhile, similar model with just little difference has been developed by (Jennex & Olfman, 2008) which has been proven to be effective since it has been in usage since 2009. This indicates that, the developed model of the present study can also be useful and effective.

ISTAM has been tested and confirmed in the present study to be fit through SEM analysis. Due to this, the model has been confirmed from the analysis to fit the data well; therefore, it can be seen as the major theoretical contribution of the research to the discipline of knowledge management. IT states that the uniqueness of the present research is the inclusion of the TAM model which is a standalone theory into information system success theory D&M IS in form of ISTAM framework. Practically; it suggests that, proper training and enlightenment should be conducted in the organization in order to ensure collective, comprehensive and proper understanding of KM, with all these in place it is believed that the oil and gas company in the kingdom could be successful in terms of its knowledge management implementation.

References

Al-Shammari, M. & SamerKanina A. (2014), Perceived Customer Service Quality in a Saudi Automotive Company International Journal of Managerial Studies and Research 2 (10), 173-182

Alammary, J., & Fung, C. C. (2008). Knowledge Management Strategic Alignment in the Gulf Cooperation Council Countries. *Journal of Knowledge Management*, *6*(2), 75–84.

Alhamoudi, S. A. (2010). Strategic Knowledge Management System in Public Sector in Saudi Arabia: An adaptation of the Balanced Scorecard Salwa. Knowledge Management, (October). Retrieved from http://eprints.port.ac.uk/4164/

Ali, Mustafa Rateb Mahmoud (2012), Determinants Of knowledge sharing in Professional Services (p. 19), (Case study: The Network Operations Directorate in Jawwal Company), a dissertation submitted in partial fulfillment of the requirements for the degree of MBA, December, 2012. Almuayqil, S., Atkins, A. S., & Sharp, B. (2015). Knowledge Management Framework for E-Healthcare in Saudi Arabia. eTELEMED 2015 : The Seventh International Conference on eHealth, Telemedicine, and Social Medicine, (c), 112–117,ISBN 978–1–61208–384–1.(Best Paper Award).

AlRowaily, Khalid and AlSadhan, Abdulaziz (2012), Integration of Knowledge Management system in Telecommunication: A case Study of Saudi Telecom, JCSNS International Journal of Computer Science and Network Security, VOL.12 No.11, November 2012, pp 42-53.

Alshehri, Hasan, Alyoubi, Bader A and El Emary, Ibrahiem M.M., (2012), Effectiveness of Knowledge Management Strategies on Business Organizations in KSA: Critical Reviewing Study, Middle-East Journal of Scientific Research 12 (2): 223-233, 2012, ISSN 1990-9233,© IDOSI Publications, 2012, DOI: 10.5829/idosi.mejsr.2012.12.2.1690, pp 223-233.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equations modeling in practice: A review and recommended two-step approach. Psychological Bulletin, 103(3), 411–423.

Azyabi, N., & Fisher, J. (2014). Exploration and Exploitation as Knowledge Management Strategic Approaches in Saudi Arabian SMEs. *25th Australasian Conference on Information Systems*, (1978).

Barclay, R. O., & Murray, P. C. (2013). What is Knowledge Management ? What is Knowledge Management ? *Knowledge Praxis*, (October), 1–10.

Basahel, A. (2010). Examining the strategic benefits of information systems : a global case study, *2010*.

Bragazna, Ashley (2009), Knowledge Management during radical Change: Applying a process Oriented approach, Cranfield School of Management. Bragazna, Ashley (2009), Knowledge Management during radical Change: Applying a process Oriented approach, Cranfield School of Management.

Byrne, B. M. (2001). Structural equation modeling with AMOS: Basic concepts, applications, and programming. Mahwah, New Jersey: Lawrence Earlbaum.

Chuttur, Mohammad Y. (2009), Overview of the Technology Acceptance Model: Origins, Developments and Future Directions, Indiana University, USA. Sprouts: Working Papers on Information Systems, 9(37). http://sprouts.aisnet.org/9-37.

Davis, F. (1985), "A Technology Acceptance Model for Empirically Testing New End-user Information Systems: theory and results", Unpublished Doctoral dissertation, MIT Sloan School of Management, Cambridge, MA.

Creswell, J. (2008) Research design: Qualitative, quantitative, and mixed methods approaches, Thousand Oaks, CA: Sage.

Davis, F. (1989), Perceived usefulness, perceived ease of use, and user acceptance of Information Technology. MIS Quarterly, 1989, Vol. 13, No.3, pp 313-340.

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. Information Systems Research, 3(1), 60–95.

DeLone, William H. & Mclean, Ephraim R. (2003), The DeLone and McLean Model of Information System Success: A Ten-Year Update, Journal of Management Information Systems/ spring 2003, Vol. 19, No. 4, pp 9-30.

Fishbein, M. & Ajzen I. (1975), Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research, Reading, MA: Addison-Wesley.

Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research 18 (1), 39-50.

Gaines, C., Hoover, D., Foxx, W., Matuszek, T., & Morrison, R. (n.d.). Information systems as a strategic partner in organizational performance. *Journal of Management and Marketing Research*, 1–17.

Hair, J.F., Jr., Anderson, R.E., Tatham, R.L., Black, W.C. (1995). Multivariate Data Analysis with Readings, Prentice-Hall, Englewood Cliffs, New Jersey

Halawi, Leilah A., McCarthy, Richard V. and Aronson, Jay E. (2007), An Empirical Investigation of Knowledge Management Systems' Success, Journal of Computer Information Systems. Winter2007/2008, Vol. 48 Issue 2, pp 121-135.

Holmes-Smith, P., (2001). Introduction to Structural Equation Modeling using LISREL. Perth, ACSPRI-Winter training program.

Ichijo, Kazou and Nonaka, Ikujiro (2006), Knowledge creation and management, Oxford University Press.

Jennex, M. E., & Olfman, L. (2008). A Model Of Knowledge Management Success. Current Issues In Knowledge Management, 1(2), 33–51. Http://Doi.Org/10.4018/978-1-59904-916-8

López, S. P., Peón, J. M. M., & Ordás, C. J. V. (2009). Information Technology as an Enabler of Knowledge Management: An Empirical Analysis. *Information Systems*, *4*, 181–197. http://doi.org/10.1007/978-1-4419-0011-1

Kline, R. B. (2010). Principles and practice of structural equation modeling (3rd ed.). New York, NY: Guilford Press.

Kulkarni, Uday R., Ravindran, Sury, and Freeze Ronald (2006), A Knowledge Management Success Model: Theoretical Development and Empirical Validation, Journal of Management Information Systems / Winter 2006–7, Vol. 23, No. 3, pp 309–347.

Lai, Jung-Ya (2009), How Reward, Computer Self-Efficacy, and Perceived Power Security Affect Knowledge Management Systems Success: An Empirical Investigation in High-Tech Companies, Journal of the American Society for Information Science and Technology , 2009, Vol. 60, No.2 pp 332–347.

Magd, Hisham and Hamza, Saleh (2012), A Proposed Knowledge Management System in SOFCON: Saudi Arabia Perspectives, Nang Yan Business Journal – 1.1 – 2012, Paper #: 2 - 07 P- 119-128,

Noordin, Mohamad Fauzan, Othman Roslina and Zakaria, Noor Azura (2011), Peopleware & Heartware – The Philosophy of Knowledge Management, Research and Innovation in Information Systems (ICRIIS), International Conference on 23-24 Nov. 2011.

Oil and Gas Reality Check 2015. (2014). A look at the top issues facing the oil and gas sector. *Deloitte*, 1–28. Retrieved from http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/gx-er-oil-and-gas-reality-check-2015.pdf

Pallant, J. (2007) SPSS Survival Manual, 3rd Edition, Crows West, New South Wales, 2007.

Rasmussen, P. and Nielson, P. (2011), Knowledge Management in the firm, concepts and issues. International Journal of Manpower 2011, Vol. 32, pp 479-493.

Riz, Lubna (2014), Comparative analysis of knowledge management in different parts of the world, Life Science Journal 2014;11(9), pp 562-567.

Ryan, Sherry D., Windsor, John C., Ibragimova, Bashorat, and Prybutok, Victor R. (2010), Organizational Practices That Foster Knowledge Sharing: Validation across Distinct National Cultures, Informing Science: the International Journal of an Emerging Transdiscipline , Vol. 13, 2010, pp.139-164.

Seddon, Peter B. (1997), A Respecification and Extent ion of the Delone and McLean Model of IS Success, Information Systems Research (1997), Vol. 638, No. 3, pp 240–253.
Shafique, F. (2015). Knowledge Management in Higher Education : Applicability of Lkmc Model in Saudi Universities, 175–181. http://doi.org/10.5121/csit.2015.50215
Tıngoy, Ö., & Kurt, Ö. E. (2009). Communication in knowledge management practices : a survey from. *Problems and Perspectives in Management*, *7*(2), 46–52.
Xu, J., & Quaddus, M. (2010). Information Systems for Competitive Advantages. *Managing Information System*, 27–41. http://doi.org/10.2991/978-94-91216-89-3
Wu, Jen-Her & Yu-Min, Wang (2006), Measuring KMS Success: A Respecification of the Delone and McLean Model, Journal of the Information Management, 2006, Vol. 43, pp 728–739.
Zaher, Doaa Abbas (2012), Barriers to Implementation of Knowledge Management in Hospital Institutions in Saudi Arabia, The Asian Business and Management Conference 2012, Official Conference Proceedings, iafor, The International Academic Forum, www.iafor.org, pp 418-428
Zheng, W., Yang, B. and McLean, G. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. Journal of Business Research, 2010, Vol. 63, Issue 7 pp 763–771.
Zikmund W G. (2003) Business Research Methods, 7th edition, Thomson/South-Western