Knowledge Management Process as a Source to Create Sustainable Competitive Advantage for Private Universities

Araden Hatim Khudair Al-Obaidi[1*], Ahmed Mohammed Fahmi[2] and Hamad Karem Al-Hadrawi[3]

[1]*Assist. Prof. University of Al-Mustansiriya / College of Administration and Economics, Iraq*
[2]*Assist. Prof. Al-Rafidain University College / Business Management Department, Iraq*
[3]*Assist. Prof. University of Kufa / College of Administration and Economics, Iraq*

*Corresponding author

Abstract

In this study we have tried to investigate the effect of Knowledge management including its dimensions (knowledge creation, knowledge sharing and knowledge utilization) on sustainable competitive advantage. According to the researches and literatures conceptual framework were proposed and tested. the population of this study includes professors in private universities in middle of Iraq, random sample were selected from them, using structural equation modeling and regression we tested the model, the results confirmed that knowledge management and its dimensions have significantly affect the sustainable competitive advantage.

Introduction

In the recent past, business knowledge has been a determinant of business success and a gain of competitive advantage. Knowledge is treated as a valuable asset such as human resource or machinery and, it has been embraced by the most successful organizations globally. Private sectors use the concept of the benefits of knowledge to gain a competitive advantage (Mong *et al.,* 2009).

Technology advancements, liberalization, and globalization have heightened the competitiveness of the business world (Pang, 2011). Also, learning institutions, especially in departments of organizational studies and public relations, have embraced the aspect of handling knowledge (Gary *et al.,*2016). Therefore, efficient and professional management is required to inculcate knowledge management for them to carry out their core processes effectively. That is the whole concept of knowledge management (Schilirò, 2016).

Knowledge management stands at the core of managing the organization's resources and setting of organizational strategies (Gottschalk, (2011). History has shown that those organizations which have embraced knowledge management have recorded outstanding performances than those that have not. A firm can miss enormous business opportunities just because they neglected knowledge management aspect (Von Krogh, 2009).

Therefore, firms that seek to stay afloat understand the benefits of managing knowledge. Knowledge can be best managed through the development of logical plans for its

appraisal, and generate strategies on how they can combine knowledge among other factors to achieve the objectives of the organization. The reasoning behind this argument is that knowledge is a key predictor of a firm's performance index and profitability (Bousa and Venkitachalam, 2013).

Kamhawi, 2012 also established the same sentiments, stating that knowledge and success and inseparable. Therefore knowledge management cannot be overlooked when talking about the success of an organization.

Problem Formulation

Existing literature has established that education is in high demand than the case experienced in the past. Private and public institutions have increasingly enrolled a higher number of students globally. The public institutions have always remained competitive than their private counterparts (mohesr.gov.iq.2016) (Annual Assessment Reports for Private universities, mohesr.gov.iq).

The public institutions are believed to having a better education system regarding quality than the private institutions. The private institutions, on the other hand, are primarily interested in maximizing profits than delivering quality services. The public institutions have a very strong strategy (Romero & Rey,2004), and, for them to remain at the top, they must put strategies in place to maintain their competitiveness (Kotler,2001).

Therefore, the problem statement of this paper will be to determine how private institutions can reach to sustainability in their competitive advantage by applying knowledge management.

Objectives

This paper shall have three main study objectives;

Are there statistical correlation between the (Knowledge management and sustainable competitive advantage) for an institution?

Does knowledge management has a significant impact on a sustainable competitive advantage?

To reach these goals, a comprehensive knowledge management and sustainable competitive advantage model can be used as the basic model to get modified according to institutions requirements and specifications.

Literature Review

Knowledge Management

The term "knowledge" has many definitions, depending on the perspective from which one is studying it from. According to (Davenport & Prusak,1998), knowledge is made up of data that is contextual, which has been mastered by an expert in a specific field through his experience and innovation. In the business world, knowledge is regarded as the firm's culture and its unique skills which shape the conduct of the employees of the organization (Abubakar *et al.,*2017).

Knowledge management, on the other hand, comprises of all activities creates, develops and disseminates the knowledge. In general, knowledge management looks into the current state and seeks to find ways to solve the current needs as well as those that can be predicted. (Kucza, 2001).

Knowledge Management Process

There is no unified agreement between authors and researchers on the number of knowledge management processes (Alharithy,2015),different researches define it in different ways (Costa & Monteiro,2016),with several models in which it is introduced as three step process composed of (Generate knowledge, Encode knowledge,Transfer knowledge) (Hlupic: 2002), or four step process composed of (Obtain knowledge, Establish knowledge,Divide knowledge, Distribute and publish knowledge) (Laudon & Laudon: 2001). Five step process composed of (Knowledge acquisition,knowledge creation, knowledge transfer, knowledge storage and knowledge application) (Costa & Monteiro,2016) (Shujahat *et al.,*2017)define the most famous model of knowledge management as a three step process composed of (knowledge creation,knowledge sharing,and knowledge utilization).

Knowledge creation

Knowledge creation is a process in which new knowledge is created through the four sub-processes of organizational knowledge creation theory on a continuous basis (Andreeva & Kianto, 2011) that four process called (SECI) modes of knowledge conversion includes (socialization, combination, externalization and internationalization) (Zaibon, 2015). The creation of knowledge depends on the interaction of a set of steps between them, called knowledge creation systems

through which individuals participate to create dynamic knowledge in a process of social interaction and collaboration that contributes to the transformation of implicit knowledge and transfer to other social groups. (Sorensen&Lundh,2001), Accordingly,The process of knowledge creation can be illustrated in figure (1).
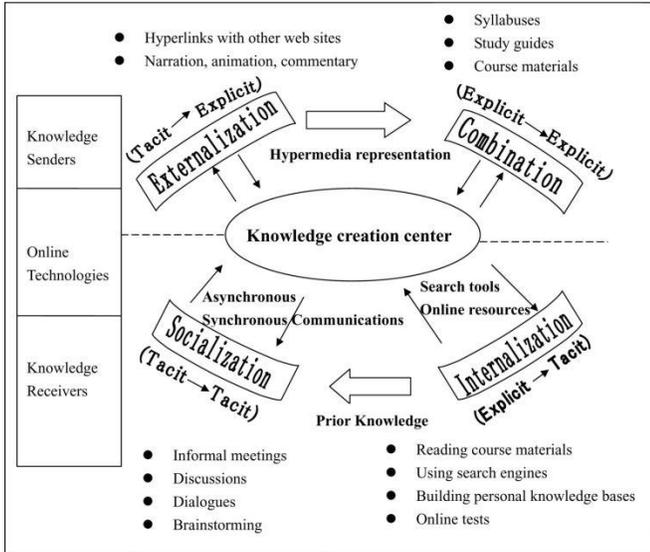

Figure.1 Knowledge creation framework

Knowledge Sharing

Knowledge sharing involves a set of steps from knowledge creation to implementation(Gover& Davenport,2001),There is no uniform definition among writers and researchers about the concept of knowledge sharing (Earl & Scott,1999), Knowledge sharing is a set of activities related to the transfer and dissemination of knowledge between two or more individuals, so it more than communication and information distribution (Rahmat&Mahmood,2013).the knowledge sharing process involves two parties (receiver and contributer)(Fengjie&Xin,2004), it donation and collection of knowledge among the different knowledge units in a firm (Becerra *et al.,* 2004).

Knowledge Utilization

(Lee *et al.,*2013) stated that knowledge utilization is also called (knowledge implementation or knowledge application). It relates to responding to different types of knowledge an individual entity has within an organization (Gold,2001),so knowledge utilization is the application of knowledge that has been shared(Song,2005) it represents the core procedure for the whole business operation ranging from decision

making to implementation. the knowledge utilization can be organized into two categories for the purpose of value creation, one is knowledge utilization in daily business activities and the other is knowledge utilization in innovation (Meckl *et al.,*2008).

Through previous processes, knowledge is formed through the transformation between implicit knowledge and explicit knowledge, and making it available for use by the most members of the organization, which makes the interaction between knowledge gained positively reflected on the performance of individuals and the organization in general.

Sustainable Competitive Advantage

Sustainable competitiveness is an important topic and a goal for the long-term success of organizations. In this regard, literature refers to the use of different sources and types of strategies and means to help organizations achieve this goal (Kim,1999), Based on its capabilities and potentials which are reflected in the success of the Organization in general (Hayes et al,1996)

The term "Sustainable Competitive Advantage" was first brought into light in 1985, by Porter, when he was explaining strategies organizations can adopt to gain a competitive advantage. He was comparing low cost versus differentiation strategies (Kim *et al.,*2012). Porter (1985) established that competitive strategy could be broken down into the process applying strategies to give the clients value (Rechenthin, 2004).

The basis of Sustainable Competitive Advantage is created from organization's values, strategies, and the company's reputation(Barney, 1997).According to Kay (1995), building Sustainable Competitive Advantage for an organization depends on the positioning of subject in value network (Hollensen 2010).

Research Methodology

Sampling

The research used qualitativeresearch method, the conceptual framework try to explain the relation between the main variables (knowledge management, sustainable competitive advantage), a survey was conducted to collect data, This survey was conducted in (Private universities) in middle of Iraq, the study population was composed of university professors for five universities (Kafeel, Islamic, Future, Humanities, Safwa), in

total,217 professors of these universities composed the study sample according to the equation of (Thompson,2002):

$$n = \frac{N \times p(1-p)}{\left[\left[N - 1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

………

………. Thompson,2002

The data were collected using a researcher-made questionnaire based on adapted version of (Alharithy,2015) model , the questions were designed and classified in the following 4 sections : knowledge creation (5 questions), knowledge sharing (5 questions), knowledge utilization (5 questions), sustainable competitive advantage (8 questions),the questions could be responded on a Likert scale of 5 points with (completely disagree to completely agree).

Sample Characteristics

With respect to the characteristics of the sample,table (1) shows that the majority of the sample members are male, the percentage of males is 76.04 %, while the percentage of females is 23.96 %. In addition, the majority of those aged under 40 years, and the percentage of masters holders was 68.66 % and the percentage of PhD holders was 31.34%.

Conceptual model

A conceptual model is designed to illustrate causal relationships between variables. The independent variable (knowledge management) is composed of three basic dimensions (knowledge creation, knowledge sharing, knowledge utilization) ,the dependent variable (sustainable competitive advantage), as shown in Figure (2).
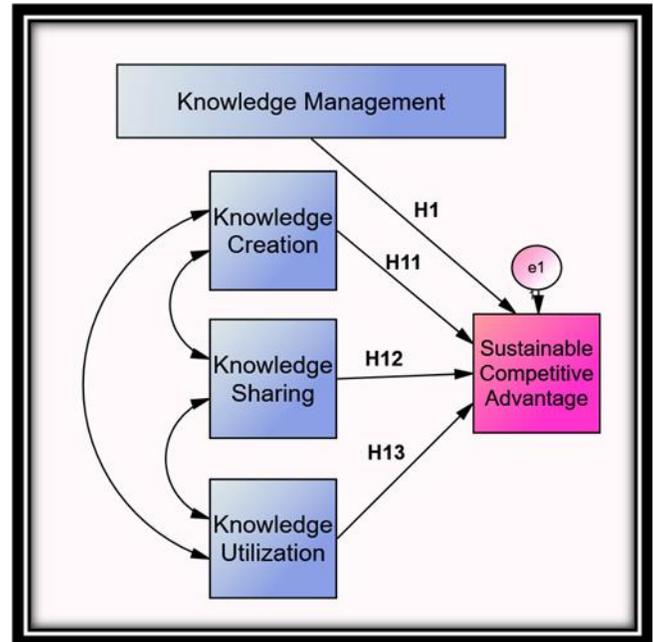

Figure.2 The Proposed Model

Table.1 Sample Characteristics

Demographic features		Frequencies	Percentage
Gender	Male	165	76.04%
	Female	52	23.96%
		217	100%
Age	Less than 40	139	64.06%
	41-50	34	15.67%
	More than 50	44	20.28%
			100%
Academic Degree	PHD	68	31.34%
	MSC	149	68.66
		217	100%

Table.2 Research measurement and coding

Factor	Code	No. of items	Measurement
Knowledge Management	KM	15	Costa & Monteiro,2016
Knowledge Creation	KC	5	Andreeva& Kianto,2011
Knowledge Sharing	KS	5	Rahmat&Mahmood,2013
Knowledge Utilization	KU	5	Meckl *et al.*,2008
Sustainable Competitive Advantage	SCA	8	Kim *et al.*,2012

Research Measurements and coding

Table (2) shows the research measurement and coding.

Research Hypothesis

In order to achieve the objectives of the study, the following hypotheses were formulated:

H1 : Knowledge management positively affects sustainable competitive advantage.

H11 : Knowledge creation positively affects sustainable competitive advantage.

H12 : Knowledge sharing positively affects sustainable competitive advantage.

H13 : Knowledge utilization positively affects sustainable competitive advantage.

Results and Discussion

Reliability

To measure the reliability and consistency of the questionnaire it was confirmed through distribution of the questionnaire among professors, table (3) indicates that the reliability of internal consistency is sufficient in terms of knowledge management variables and sustainable competitive advantage, generally (Cronbach's alpha coefficient = 0.869), and (0.711-0.859) for variables.

Normality Test

Table (4) and (5) shows the result of normality test, it shows that the skewness and kurtosis statistics are in accepted value (it should be between +1.96, -1.96), so the data follow the normal distribution.

Confirmatory factor analysis

Based on the conceptual framework and the results of factor analysis, we estimated the structural equation modeling, that is shown in table (6) and fugure(3),(4), it listed the calculated good of fit measures.

The measurement model provides satisfactory data compatibility of knowledge management. The indicators of fit are as follows: (GFI =0.912), (AGFI=0.908), (CFI=0.956), (TLI=0.918), (RMSEA=0.078), while the indicators of sustainable competitive advantage,the indicators of fit are as follows: (GFI = 0.952), (AGFI=0.921), (CFI=0.964), (TLI=0.928), (RMSEA=0.069),these results indicates to a high level of validity. In other word,it shows that all measures meet commonly used criteria for a good fit.

Table.3 Reliability and validity results

N	Scale	Items	No. of items	factors	Cronbach's alpha
		1-15	15		0.859
		1-5	5	Knowledge Creation	0.789
	Knowledge Management	6-10	5	Knowledge Sharing	0.770
217		11-15	5	Knowledge Utilization	0.803
	Sustainable Competitive Advantage	1-8	8		0.711
	All				0.869

Table.4 Normality test results for knowledge management data

Variable	min	max	skew	c.r.	kurtosis	c.r.
q15	2.000	5.000	-.341	-2.048	-.552	-1.659
q14	1.000	5.000	-.249	-1.498	-.592	-1.779
q13	2.000	5.000	-.456	-2.740	-.503	-1.511
q12	2.000	5.000	-.153	-.918	-.549	-1.650
q11	2.000	5.000	-.638	-3.838	.012	.035
q10	1.000	5.000	-.763	-4.587	1.265	3.804
q9	2.000	5.000	-.372	-2.236	-.472	-1.418
q8	2.000	5.000	-.460	-2.766	-.335	-1.007
q7	2.000	5.000	-.371	-2.231	.102	.305
q6	2.000	5.000	-.619	-3.720	.101	.303
q5	2.000	5.000	-.492	-2.957	-.612	-1.839
q4	2.000	5.000	-.471	-2.830	-.755	-2.271
q3	2.000	5.000	-.457	-2.746	-.411	-1.237
q2	2.000	5.000	-.470	-2.829	-.348	-1.046
q1	2.000	5.000	-.569	-3.422	-.406	-1.220
Multivariate					46.042	15.017

Table.5 Normality test results for Sustainable Competitive Advantage data

Variable	min	max	skew	c.r.	kurtosis	c.r.
q8	2.000	5.000	-.460	-2.766	-.335	-1.007
q7	2.000	5.000	-.371	-2.231	.102	.305
q6	2.000	5.000	-.619	-3.720	.101	.303
q5	2.000	5.000	-.492	-2.957	-.612	-1.839
q4	2.000	5.000	-.471	-2.830	-.755	-2.271
q3	2.000	5.000	-.457	-2.746	-.411	-1.237
q2	2.000	5.000	-.470	-2.829	-.348	-1.046
q1	2.000	5.000	-.569	-3.422	-.406	-1.220
Multivariate					14.619	8.513

Table.6 Good of fit measures

Good of fit	Index	Criteria
$\chi 2$/d.f	4.235	<5.0
RMSEA	0.078	<0.08
GFI	0.912	>0.90
AGFI	0.908	>0.90
CFI	0.956	>0.95
TLI	0.918	>0.90

*$\chi 2$ = Chi square ,   df= degree of freedom ,   RMSEA=Root mean square error ,
GFI = Good fit index , AGFI = Adjusted good fit index , CFI = Comparative fit index ,
TLI = Tucker Lewis index.*

Table.7 Coefficients of the path

Hypotheses			standard coefficient	C.R
Y	<---	X1	.149	2.42*
Y	<---	X2	.377	4.21**
Y	<---	x3	.577	5.60**
Y	<---	x	.874	6.11**

*p< 0.05   **p<0.01

Table.8 results of hypotheses

a	B	R^2	AR^2	T	F	Sig
1.950	0.481	0.318	0.314	10.003	100.051	0.000
1.212	0.671	0.473	0.471	13.905	193.354	0.000
1.115	0.712	0.657	0.655	20.277	411.150	0.000
0.027	0.992	0.757	0.756	25.872	669.369	0.000
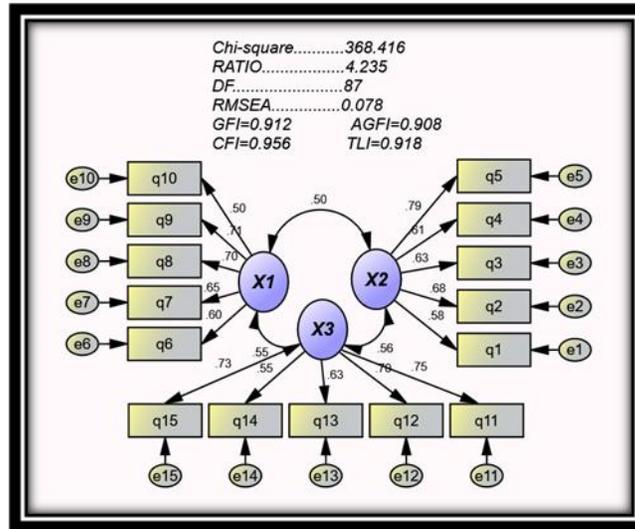
Figure.3 KM Modeling
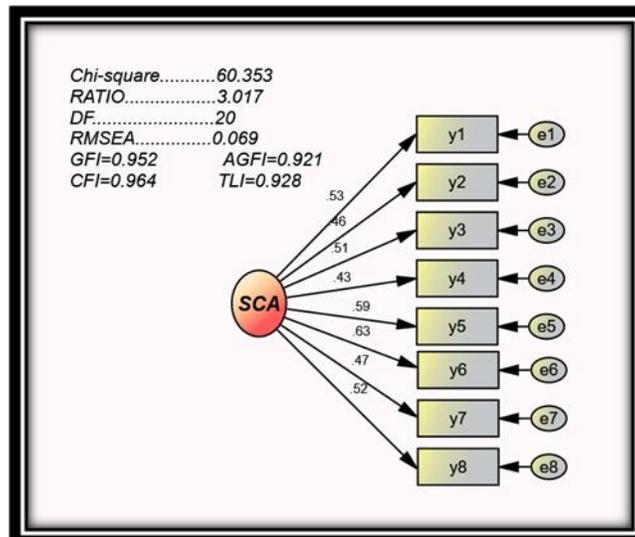
Figure.4 SCA Modeling
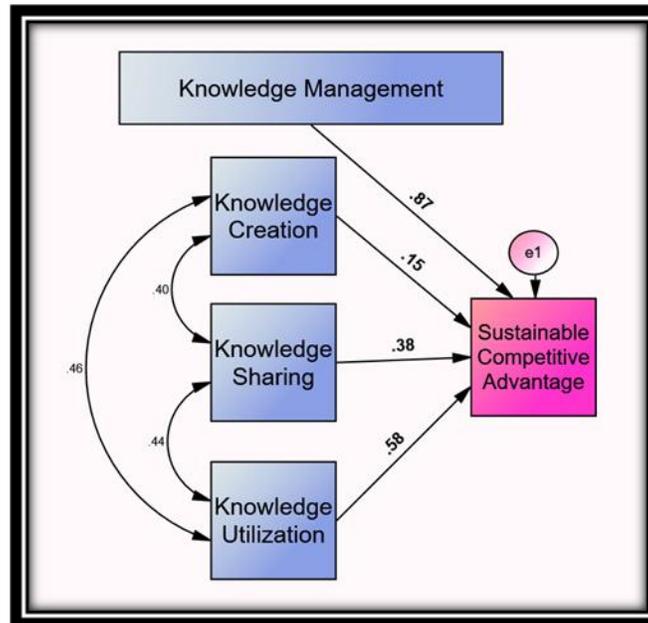
Figure.5 Coefficients of the Path

Modeel analysis

The study uses structural equation modeling with a maximum probability estimation method, a suitable model analysis through standardized coefficients and other appropriate statistics from the research model that produces statistical analysis results based on proven analysis results

As shown in table (7) and figure (5),the standard coefficient and critical ratio indicating that the knowledge managementstandard coefficient is (0.874) and critical ratio (C.R=6.11) in p<0.01, and the dimensions also indicated that there was an effect.the knowledge creation hasa standard coefficient(0.149) and critical ratio (C.R=2.42) in p<0.05,knowledge sharing hasa standard coefficient (0.377) with critical ratio (C.R=4.21)) in p<0.01, while the standard coefficient of knowledge utilization was (0.577) and critical ratio (5.60) in p<0.01.

And with simple regression table (8) refer to :
- Knowledge creation with a regression coefficient (0.481) and effect the (Sustainable Competitive Advantage) significantly at the significant level (0.01) according to the (f) test,and it interpreted (31.4%) from the variance of the model.
- Knowledge sharing with a regression coefficient (0.671) and effect the (Sustainable Competitive

Advantage) significantly at the significant level (0.01) according to the (f) test,and it interpreted (47.1%) from the variance of the model.
- Knowledge utilization with a regression coefficient (0.712) and effect the (Sustainable Competitive Advantage) significantly at the significant level (0.01) according to the (f) test, and it interpreted (65.5%) from the variance of the model.

- Knowledge management with a regression coefficient (0.992) and effect the (Sustainable Competitive Advantage) significantly at the significant level (0.01) according to the (f) test,and it interpreted (75.6%) from the variance of the model. Therefore, these results supported (H1,H11,H12,H13).

This research examined knowledge management and sustainable competitive advantage in private universities in Middle Furat territory in Iraq. The findings showsthat there is a significant positive impact on this relationship, indicating that sustainable competitive advantage improves when knowledge management is applied. The results showed that knowledge creation,knowledge sharing and knowledge utilization had a strong and statistically significant effect on sustainable competitive advantage.so, the hypothesis were supported. Eventually, the statistical results of this investigation yielded a positive impact of knowledge management and its dimensions (Knowledge creation, Knowledge sharing,

Knowledge utilization) on a sustainable competitive advantage. Knowledge management are generally vital to the success of organizations and sustainable competitive advantage.

The development of the management of intangible resources has become essential for modern organizations. Knowledge development has resulted in the emergence of new competitive areas and has been reflected in the inputs and outputs of organizations, including educational organizations.

Educational organizations Is central to meeting society's needs and achieving sustainable development. so,they should be interested in providing Knowledge management requirements in order to achieve sustainable competitive advantage, and be interested in supporting research projects and cooperation with other universities, in addition to the relationship with the private sector.

References

Abubakar, A. M., Elrehail, H., Alatailat, M. A., &Elçi, A. (2017). Knowledge management, decision-making style and organizational performance. Journal of Innovation & Knowledge.

Alharithy M., A. (2015). Knowledge Management Process in Several Organizations: Analytical Study of Modeling and Several Processes. Procedia Computer Science, 65, 726-733.

Andreeva, T., &Kianto, A. (2011). Knowledge processes, knowledge-intensity and innovation: A moderated mediation analysis. Journal of Knowledge Management, 15(6), 1016–1034.

Barney JB. Gaining and sustaining competitive advantage. New York: Addison-Wesley; 1997.

Becerra-Fernandez, I., Gonzalez, A., &Sabherwal, R. (2004). Knowledge management challenges, solutions, and technologies. Upper Saddle River, NJ: Pearson Prentice Hall.

Bosua, R. and Venkitachalam, K. (2013). Aligning strategies and processes in knowledge management: a framework. Journal of Knowledge Management, 17(3), 331-346,.

Costa, V., &Monteiro, S. (2016). Key knowledge management processes for innovation: A systematic literature review. VINE Journal of Information and Knowledge Management Systems, 46(3), 386–410.

Davenport, T. H., &Klahr, P. (1998). Managing customer support knowledge. California Management Review, 40(3), 195–208.

Earl, M. J., & Scott, I. A. (1999). Opinion: What is a Chief Knowledge Officer? Sloan Management Review, 40(2), 29.

Gary Castrogiovanni, Domingo Ribeiro-Soriano, Alicia Mas-Tur, NoratRoig-Tierno, (2016),Where to acquire knowledge: Adapting knowledge management to financial institutions, Journal of Business Research, Volume 69, Issue 5.

Gold, A. H., Malhotra, A., &Segras, A. H. (2001). Knowledge management: An organisational capabilities perspective. Journal of Management Information Systems, 18(1), 185–214.

Gottschalk, P. (2011). Promoting Scientism: Institutions for Gathering and disseminating Knowledge in British Bihar. Knowledge Production, Pedagogy, and Institutions in Colonial India, 171-197.

Gover, V., & Davenport, T. H. (2001). General perspectives on knowledge management: Fostering a research agenda. Journal of Management Information Systems, 18(1), 5-21.

Hayes, R. H., Pisano, G. P., & Upton, D. M. (1996). Strategic operations: Competing through capabilities. New York: Free Press.

Hlupic, V.Pouloudi&Rzerski, G., (2002) "Towards an integrated approach toknowledge Management: knowledge and process Management", Vol. 9, No.2.

Hollensen S (2010) Marketing management: A relationship approach. Edinburgh: PEL.

Kamhawi, E. M. (2012). Knowledge management fishbone: A standard framework of organisational enablers, Journal of Knowledge Management, 16(5), 808-828.

Kay J. (1995),Why firms succeed. Oxford: Oxford Univ Press.

Kim MS. (1999),A study on the marketing strategy establishment for competitive advantage. J Glob Acad Mark Sci;3:235–51.

Kim, K. H., Jeon, B. J., Jung, H. S., Lu, W., & Jones, J. (2012). Effective employment brand equity through sustainable competitive advantage, marketing strategy, and corporate image. Journal of Business Research, 65(11), 1612-1617.

Kucza, T. (2001). Knowledge management process model. Vtt Publications.

Laudon, K. and Laudon, J. (2001) Essentials of information systems: Organization and technology in the networked enterprise (4th ed.), Prentice Hall, New Jersey.

Lee, V. H., Leong, L. Y., Hew, T. S., &Ooi, K. B. (2013). Knowledge management: A key determinant in advancing technological innovation? Journal of Knowledge Management, 17(6), 848–872.

Machlup, F. (2014). Knowledge: Its Creation, Distribution and Economic Significance, Volume III: The Economics of Information and Human Capital (Vol. 3). Princeton University Press.

Meckl, R., Rongping, M., &Fanchen, M. (2008). Technology and innovation management: theories, methods and practices from Germany and China. OldenbourgVerlag.

Mong-Yuan Chang, Yu-Chung Hung, David C. Yen, Paul T.Y. Tseng, (2009), the critical success factors of knowledge management and classification framework project in the Executive Yuan of Taiwan Government, Expert Systems with Applications, Vol. 36, Issue 3, Part 1.

Pang-Lo Liu, (2011),Empirical study on influence of critical success factors on ERP knowledge management on management performance in high-tech industries in Taiwan, Expert Systems with Applications, Volume 38, Issue 8.

RahmatUllah Shah, S., &Mahmood, K. (2013). Knowledge-sharing behavior in dairy sector of Pakistan.

Rechenthin, D. (2004). Project safety as a sustainable competitive advantage. Journal of safety research, 35(3), 297-308.

Schilirò, D. (2016) Investing in Knowledge: Knowledge, Human Capital and Institutions for the Long Run Growth. Governance of Innovation.

Shujahat, M., Hussain, S., Javed, S., Thurasamy, R., & Ali, J. (2017). Strategic management model with lens of knowledge management and competitive intelligence: A review approach. VINE Journal of Information and Knowledge Management Systems, 47(1), 55–93.

Song, M., Bij, H. V. D., &Weggeman, M. (2005). Determinants of the level of knowledge application: A knowledge-based and information-processing perspective. Journal of Product Innovation Management, 22(5), 430–444.

Von Krogh, G. (2009). Individualist and collectivist perspectives on knowledge in organizations: Implications for information systems research. The Journal of Strategic Information Systems, 18(3), 119–129.

Zaibon, S. B., Ahmad, M., Omar, M., &Zainol, (2015),A. knowledge sharing process for pair programming practice among university students, 5th International Conference on Computing and Informatics, ICOCI.