

**THE IMPACT OF KNOWLEDGE MANAGEMENT STRATEGIES,
OPERATIONS, AND PROCESSES ON ORGANIZATIONAL INNOVATION**

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ABSTRACT: *This paper evaluates the importance of knowledge management in enhancing innovation in the hospital sector in Beirut area. On this emerging economy, organizations are more aware of developing knowledge for a reason to be comparative in the market and gain a sustainable competitive advantage. (Association of Marketing, Bancario, Argentine, 2000). Information and knowledge become an essential resource for all businesses. It is considered a vital concept and process in conducting any business. In this paper, I conduct a study of the importance of knowledge management in achieving innovation and development in the hospital sector. This study consists of two parts: theoretical and practical. In the first part, I try to address the concept of knowledge management, learning, and innovation in general by discussing the processes of knowledge management and the authors' point of views. Then, in the second part, I establish a questionnaire survey about this topic, and I distributed in different hospitals in Beirut. As a result of my study, I realize that knowledge management, in general, is not a priority issue for the selected hospitals, and the relationship that exists between knowledge management and innovation is moderate, and this means that knowledge management in these hospitals is not the main reason for innovation. For this reason, hospitals must care more about knowledge management and must recognize that it is an essential part to reach innovation, development, and survival.*

KEYWORDS: Knowledge Management, Corporate Memory, Organizational Innovation, Sustainable Competitive Advantage, Knowledge Management Processes, Organizational Learning.

INTRODUCTION

The desire of all organizations is to maximize its profits and enhance its reputation and be distinguishable and specific from other organization. In this competitive environment, organizations have to be innovative to survive and to be innovative; it needs to be a professional in managing and using the knowledge whether the one it owns or outside. Knowledge is a critical asset that is vital and essential for all organizations, and this because it is considered the main reason for enhancing the overall performance, learning process across the organization and the innovation (Kelleher and Levene, 2001; Fong and Wong, 2005).

"Because of human's skills, knowledge and capabilities are important to organization's success and sustainable competitive advantage, it is important to efficiently and effectively manage the knowledge within and outside the organization" (M.Afacan Findikli et al., 2015).

The proper and efficient knowledge management helps organizations in many aspects. It provides the organization with solutions to its problems, improves its decision-making process and enhance the developing and implementing the creative ideas and innovation process across the organization without wasting more time, efforts and resources (Ahmad et al., 2007).

There are many outcomes that knowledge management can produce like the sustainable competitive advantage, business innovation, development, and survival, improving performance, being efficient and effective organization and many others that make the organization number one only if it accurately discover and capture first, manage, store, share and use knowledge effectively.

In this research, I will focus on an important outcome of knowledge management, the innovation. Many organizations want to reach the innovation because this will ensure its survival in this competitive economy. It is crucial to the continuing success of any organization. Innovation can improve performance, solve problems, add value and create a competitive advantage for organizations.

The process of innovation depends primarily on the knowledge that is either inside or outside the organization. It is extremely related to what extent does the organization owns the knowledge which is available when needed. Also, the ability to obtain it from other sources whether internal or external (Adams and Lamont, 2003; Cardinal et al., 2001; Darroch and McNaughton, 2002; Pyka, 2002; Shani et al., 2003). Thus, the organization must rely on knowledge that either has or can get from outsiders to produce innovative solutions to problems and to develop more innovative organizational process.

When knowledge process is done properly in an incubator environment, this will encourage learning process, collaboration and shared activities between employees and this will allow the innovation to occur. Properly knowledge management make the organization creative, innovative and learning organization. Thus, knowledge considered as the most valuable strategic resource for ensuring an organization's long-term success, development, innovation, and survival. It will lead to a sustainable competitive advantage in the market.

From this point, knowledge management, organizational learning, and organizational innovation work like a system; knowledge management considered as the input of the system, organizational learning considered as the primary procedure, and organizational innovation considered as the vital output. Thus, knowledge management is the background of innovation. And innovation is very beneficial to the organization; it reduces bureaucracy, breaking down barriers and enables benchmarking.

The main reason for establishing this research is the importance of knowledge management in life whether personal or business. It becomes a valuable resource that helps not only the organizations in achieving the goals but also people in their everyday lives. Knowledge management gains a great importance from all business owners because of its benefits that organizations can generate. It makes the organization better suited to compete successfully and gains a sustainable competitive advantage, and this will help the organization to be more creative and innovative.

I take the hospital sector as a case for my thesis and in this thesis I will test if knowledge management has an impact on hospital's innovation, and whether the relation between knowledge management and innovation is strong, moderate or weak, positive or negative. The hospitals under studying are:

AUBMC, Al-Hayat hospital, Al-Zahraa hospital, Saint-George, Al-Rasoul Al-Aazam hospital, Bahman hospital, Al-Makased hospital.

Statement of Problem

To implement an efficient and proper knowledge management strategy, operation and processes are not a simple task. Every organization/sector is a particular situation; what is working in one company maybe doesn't work in other company.

The main problem of this research is to discuss the relation of the active knowledge management process, strategy, and operation of business innovation, development, and survival. From this issue, we will discuss in this research how:

- Each knowledge management strategy can have an impact on organizational innovation, and which strategy can be considered the best one to implement it to reach the above outcome?
- Different processes of knowledge management from discovering, capturing, storing, sharing, and application can help in reaching these outcomes, and how organizational learning plays a mediating role to convert from knowledge management into organizational innovation?
- Different steps of knowledge operation from the identification, assess, design then develop then the pilot, implement and leverage can be a standard for achieving the goals of the organization?
- Can we convert KM into organizational innovation through organizational learning?
- Organizational members with significant experience in KM can enhance the performance of the organization on a commitment to learning, shared vision, and open-mindedness?

Objectives of the Study

The importance of knowledge management issue in the organization and its benefits to the organization's innovation which have an important role in the success and survival in the long term, require the importance to conduct more researches to improve the application of this concept in all business sectors in general and in hospital sector in specific.

The overall objective of this thesis is to develop a general model of knowledge management strategies, process, and operation that enhance the organizational innovation, and to improve knowledge management implementation and application in the hospitals as a way to strengthen its reputation in the competitive economy. Also, this research aims to improve the learning process in the hospitals as a way to reach the innovation.

Research Hypotheses

The following null hypotheses guided this study:

H₀₁: Continuous developing knowledge in the organization is a vital indicator of innovation.

H₀₂: Organizational memory has a positive impact on organizational innovation.

H₀₃: Using both technical and social knowledge management approaches help in achieving the objectives of the organization.

H₀₄: Innovation enhances the position of the organization in the sector.

H₀₅: Knowledge management processes will positively enhance organizational innovation.

H₀₆: Knowledge management processes help in achieving the objectives of the organization.

H₀₇: Organizational learning positively enhances the organizational innovation.

H₀₈: Proper and efficient knowledge management will enhance the innovation process.

H₀₉: Analysing the organization's needs to knowledge is an incentive to care and manage its knowledge properly.

LITERATURE/THEORETICAL UNDERPINNING

Conceptual Framework

Knowledge Management Definition: It is an emerging set of organizational general activities, its styles, rules, processes, organizational structures, applications and technologies that help employees in conserving their creative ideas and their ability to carry business value (Lee and Yang, 2000).

Corporate Memory Definition: It is made up of the total cognitive advantages that the organizations have. It consists of knowledge that embodied in the books, manuals, and processes. In addition to, the knowledge that represented in the minds of employees, intuitions and insights (Fernandez, 2010).

Organizational Innovation Definition: It is the key to the rebirth of all the business processes (Bessant et al, 2005).

Sustainable Competitive Advantage Definition: It is the application and development of actions by the organizations that bring value and differentiate it from other competitors.

Organizational Learning Definition: It is distinct from the knowledge that addresses the way of how the organization learns and adapts (Vasenska, 2013). It has considered as one of the strategic and essential tool for achieving long-term success and survival of the organization (Abdi & Senin, 2014).

THEORETICAL FRAMEWORK

The domain of knowledge management has received more attention by many authors in the literature in recent years. Many organizations' owners realize the importance of this concept for achieving many benefits to their businesses. In reality, the idea of knowledge management is not new. Many organizations have operations in dealing with the information and experience that have and combine it with knowledge that gain from external sources (Sarvary, 1999). They use knowledge management is a way for facilitating their business processes and reinforce their business success. According to Ahuja and Katila (2001), the existing knowledge is the starting point of developing new knowledge and therefore enhance its processes like decision-making, problem-solving and innovation.

Also, Leal-Rodriguez et al. (2013) recognize the importance of knowledge-based view of the knowledge management and innovation outcomes that discuss the core of knowledge management on innovation. Knowledge management provides a pathway and organized plan for management in their attempt to develop their ideas, knowledge and learning capabilities and turn it into real business life and therefore enhance their organizational capacity to innovate and survive. Also, he realizes that the analysis of the relationship between knowledge management and organizational innovation is essential to improve the business performance and innovation.

In addition, Moon and Desouza (2011) argue that the key to the success of decision making is the ability for individuals in the organization to conserve knowledge. They state that when the managers have a strong knowledge, then they have a better opportunity in making decisions that will bring positive and desired outcomes for the organization.

Dess and Picken (2000) argue that innovation is commonly an essential and fundamental source for achieving competitive advantage.

Empirical Review

Knowledge is the most important resource that hospital can use to reach its goals in the long run. It is an important ingredient for the hospitals' success, development, and survival.

As we discussed in the literature review, we observe that knowledge can be obtained from two sources: internal and external. Both sources are important in enhancing innovation in the hospital sector.

Also, during this study, we address the concept of corporate memory as an important source of knowledge that enhances the knowledge capacity of the hospital.

Also, we observe that the benefits of knowledge management are various, for instance, it helps in the decision-making process, builds learning environment, and stimulates a

culture of change and innovation which in turns enhance the position of the hospital in the sector.

The different strategies and approaches to knowledge management like technical, social, codification, personalization, exploitation and exploration enhance the learning process and thus create an innovative culture in the hospital.

And finally, we discuss in this study the processes of knowledge management from discovering, capturing, storing, sharing, and application as an important issue that enhance the learning process across the hospital.

METHODOLOGY

The methodology used in this research include

- Deductive, using general to specific modeling in which we start with a general perspective on the topic, then we go in details to a specific issue.
- Descriptive of the knowledge management model and innovation, in addition to the theories discussed and the component of knowledge management system (strategy, operation, and processes) and its relation to innovation.
- Analytical of the results observed when gathering the data from employees in the hospitals to get an overall conclusion of knowledge management system and innovation.

Variables

This study used the knowledge management, its processes and approaches as independent variables, while innovation as dependent variable.

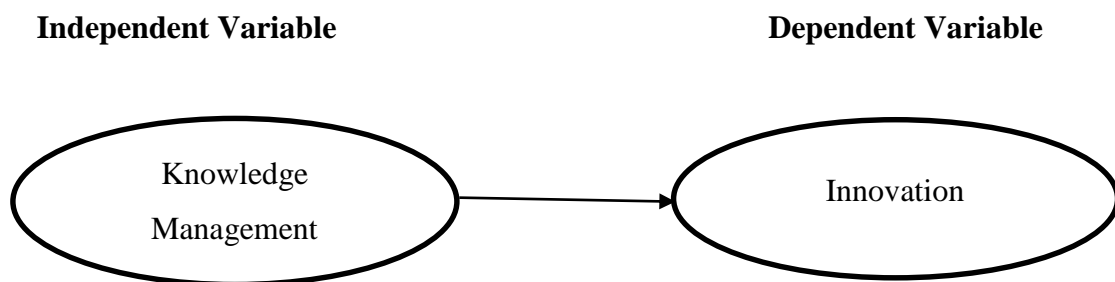


Figure 1. Main Variables of the Study

The Model Used in this study

In this study, I used the Chi-Square test which is a test used to check the relationship exist between two variables. It examines the independence or relatedness between the independent and dependent variables. This test gives a cross-tabulation table that explores the intersection of two variables. Also, it gives the result table, which enables us to see if there is a relationship between the two variables or not by looking at the Pearson significance.

- If the significance is greater than 0.05, then we fail to reject the null hypothesis, and no relationship exist between the two variables.
- If the significance is less than 0.05, then we reject the null hypothesis, and there is a relationship between the two variables.

In order to use the Chi-Square test, the variable must be both qualitative and categorical

Also, in the Chi-Square test, we can check the degree of association of the relationship between the variables by using the Cramer's V coefficient. The value that the Cramer's V give indicates the level of association of the relationship as it follows:

- If the value less than 0.2, this means that the relationship is negligible.
- If the value between 0.2 and 0.4, this means that the relationship is weak.
- If the value between 0.4 and 0.6, this means that the relationship is moderate.
- If the value between 0.6 and 0.8, this means that the relationship is strong.
- If the value above 0.8, this means that the relationship is very strong and perfect. (Boduszek, 2012).

RESULTS/FINDINGS

By analysing the results of this study, we observe the following:

- **Test of Normality**

In order to test the normality, we can use the test of Kolmogorov-Smirnov and Shapiro-Wilk between two variables.

The variables used are:

Caring about knowledge as independent variable and innovation as dependent variable.

H₀: The distribution is normal (errors follow a normal distribution)

H₁: The distribution is not normal (errors don not follow a normal distribution)

	Does the hospital care about knowledge as a part of its business practices?	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Collaborative structure	SD	.155	19	.200 [*]	.901	19	.052
enhance the developing	D	.212	17	.041	.894	17	.054
of new creative ideas	N	.233	76	.000	.882	76	.000
	A	.284	56	.000	.861	56	.000
	SA	.262	28	.000	.789	28	.000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 1: Test of normality between caring about knowledge and innovation variables

The significance of Kolmogorov-Smirnov and Shapiro-Wilk is 0.200 and 0.052 respectively, which is more than 0.05 (level of significance). Thus we accept the null hypothesis; the distribution is normal.

• **Descriptive Results**

Descriptive statistics is a technique of data analysis and used to explore the data collected and to summarize and describe those data. In this technique, we can make measures of central tendency like mean, mode, median, standard deviation, maximum, and minimum. In the following tables, there are statistical measures of some variables showing the mean, median, mode, standard deviation, and variance.

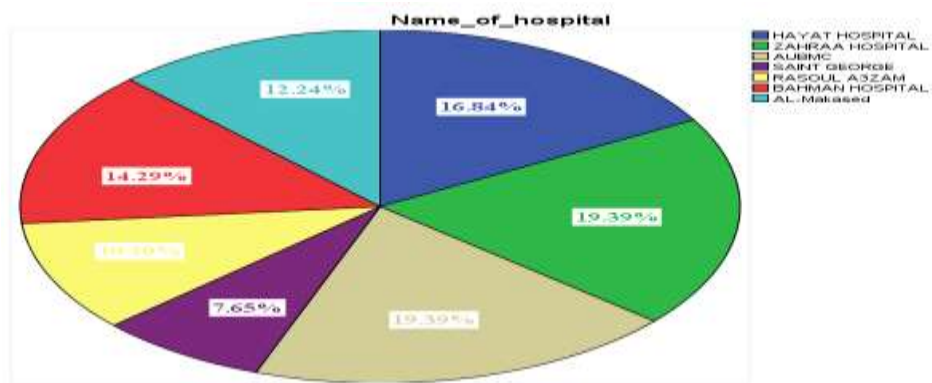


Figure 2: Pie-Chart for distributing the hospitals that respond

In the table below, we observe that there is a difference between hospitals about the status of knowledge management, and this is a normal thing, because caring about knowledge management needs capabilities and time that the hospital must provide to enhance the use of knowledge management in its processes, and this thing makes us more aware to care about knowledge management.

Current status of KM * Name_of_hospital Crosstabulation

Count		Name_of_hospital							Total
		HAYAT HOSPITAL	ZAHRAA HOSPITAL	AUBMC	SAINT GEORGE	RASOUL AZZAM	BAHMAN HOSPITAL	AL-Makased	
Current status of KM	Not existence at all	5	6	0	1	2	4	17	35
	Introduction stage	22	7	1	4	3	11	5	53
	Developing stage	4	15	18	2	6	8	2	55
	Growth stage	2	10	19	8	9	5	0	53
Total		33	38	38	15	20	28	24	196

Table 2: Frequency table for status of knowledge management in hospitals

Also, the reason about that makes employees care about knowledge management differ, and in the table below, we observe:

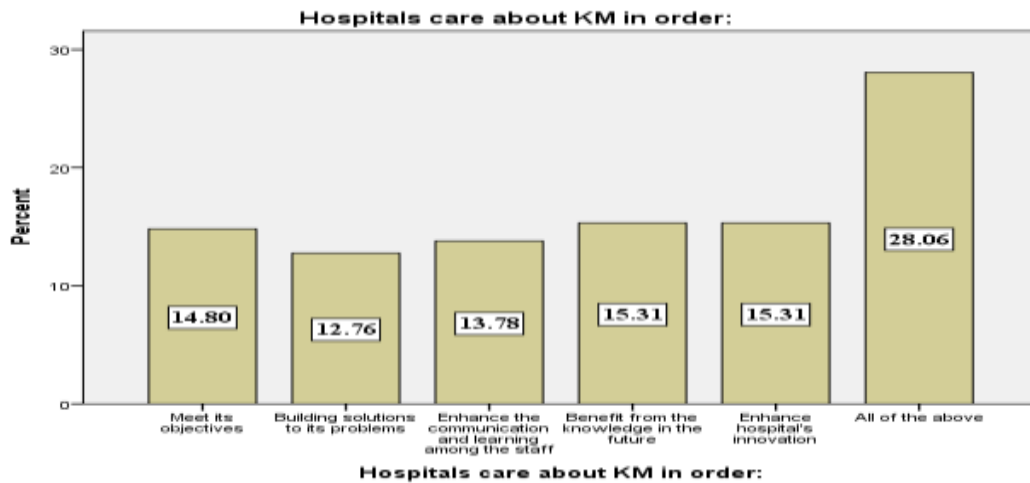


Figure 3: Histogram about the reason that makes hospitals care about knowledge management

• **Inferential Results**

Inferential statistics is a technique in data analysis; it consists of tests that measure the difference of means and tests for statistical significance.

This technique of data analysis is considered an advanced analysis. In this research, I used the Chi-Square test to check the independence or relatedness between variables. In this test, I check the correlation analysis to explore the intersection between variables. Also, I check the degree of association of the relationship between variables by using the Cramer's V coefficient.

Continuous developing knowledge in the organization is a vital indicator of innovation.

H₀: there is no relation between knowledge development and innovation.

H₁: there is a relation between knowledge development and innovation.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.215 ^a	12	.010
Likelihood Ratio	25.743	12	.012
Linear-by-Linear Association	13.729	1	.000
N of Valid Cases	196		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.36.

Table 3: Chi-Square result between current status of KM and innovation variables

The result Pearson Chi-Square = 26.215, p= 0.010

$X^2(12, N=196) = 26.215$ and $p < 0.05$ then we reject the null hypothesis.

Therefore, there is a significant relation between knowledge development and innovation.

Learning culture and innovation

H₀: there is no relation between the presence of collaborative and learning culture and innovation.

H₁: there is relation between presence of collaborative and learning culture and innovation.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.698 ^a	8	.047
Likelihood Ratio	15.397	8	.052
Linear-by-Linear Association	.109	1	.741
N of Valid Cases	196		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.10.

Table 4: Chi-Square test between collaborative and learning culture and innovation variables

Depending on the above table, we observe that the significant is 0.047 which is below 0.05, and this means that we reject H₀, and thus there is a relationship between the presence of collaborative and learning culture and innovation.

Knowledge application process and innovation

H₀: there is no relation between knowledge application process and organizational innovation.

H₁: there is a relation between knowledge application process and organizational innovation.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47.673 ^a	8	.000
Likelihood Ratio	39.898	8	.000
Linear-by-Linear Association	6.100	1	.014
N of Valid Cases	196		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .76.

Table 5: Chi-Square test between knowledge application process and innovation

There is a relationship between knowledge application process and innovation since the significant is 0.000 which is less than 0.05 and this means that we reject the null hypothesis and there is a relationship between applying and implementing the knowledge and innovation.

Proper and efficient knowledge management will enhance the innovation process.

H₀: there is no relation between caring about knowledge management and achieving innovation and development.

H₁: there is a relation between caring about knowledge management and achieving innovation and development.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.257 ^a	10	.000
Likelihood Ratio	41.711	10	.000
Linear-by-Linear Association	30.812	1	.000
N of Valid Cases	196		

a. 1 cells (5.6%) have expected count less than 5. The minimum expected count is 4.72.

Table 6: Chi-Square result between caring about knowledge management and achieving innovation and development variables

The result Pearson Chi-Square = 39.257, $p = 0.000$

$X^2(12, N=196) = 39.257$ and $p < 0.05$ then we reject the null hypothesis.

Therefore, there is relation between caring about knowledge management and achieving innovation and development.

DISCUSSION

From the descriptive analysis, first, we observe the basic descriptive about the basic information of the employees in the hospitals. It revealed that the data is approximately distributed equally among the hospitals with small differences between the hospitals which can be because of reasons that are related to the hospital. According to the gender distribution, also data is approximately equally between males and females in the hospitals, and this can give us different perspectives on this topic.

The target of this study are managers, doctors/nurses, and administrative employees. The near response of these departments in addition to other departments give us the opinions of these different targets about knowledge management and innovation. Also, to their years of experience which in this study various experienced employees respond.

Second, we observe the basic descriptive about some variables that are related to the study. It revealed that not all of the selected hospitals have the same status of knowledge management and not all employees know the exact status of knowledge in the hospital they work in. Also, most employees respond positively that innovation enhances the hospital's position in the sector, and that it is the key to the hospital's development and survival.

Also, most employees agree that the hospital they work in care about knowledge as a part of its business practices, and their hospital recognize knowledge as a part of their asset base.

Also, in this study we observe different perceptions of employees toward knowledge management concept; most of them said that it is a strategic part and a something benefit to the hospital, others said that the hospital is doing it under a different name and the lower proportion said that they did not hear of it. Also, we observe that the employees have different opinions about the importance of knowledge management in the hospital.

From the inferential analysis, it revealed that not all variables in the questionnaire survey have an effect on innovation in the selected hospitals. We observe that caring about knowledge management as a process of meeting the objectives of the hospital, building solutions to problems, enhance the communication and learning among the staff, benefit from knowledge in the future, and enhance its innovation.

Also, continuous developing knowledge in the hospitals from whether internal or external sources has a positive but low effect to achieve innovation in the hospital. Such as providing training programs and caring about patient's recommendations and opinions on the services the hospital provides, also, to the capabilities of the hospital to provide a capacity, time, and resources to develop new knowledge and ideas,

Also, storage of information whether from inside or outside the hospital and presence of collaborative and learning culture inside the hospital are important factors to achieve innovation, but the selected hospitals need to improve these issues to enhance innovation.

Concerning knowledge management processes, we observe that all the processes have an effect on innovation but a low degree.

- Discovering a new knowledge whether tacit that embodied in the employees' minds and intuitions or explicit that embodied in books, manuals and procedures have an effect on innovation but a low degree.
- Capturing and transforming knowledge from tacit to explicit and vice versa have an effect on innovation but a low degree.
- Storing and organizing of the knowledge that obtains from whether internal or external sources and conserves it have an effect on innovation but a low degree.
- Sharing the knowledge among employees have an effect on innovation but a low degree.
- Applying and implementing the knowledge that obtained have an effect on innovation have an effect on innovation but a low degree.

Another important factor that has an effect on the innovation is the organizational learning that found in the hospital culture, workplace, and environment that make the employees more involved and creative in their work and thus this will make them more innovative.

Also, we observe that presence of the internet and advanced technologies and communication between employees from different perspectives and background have a negligible effect on meeting the objectives of the selected hospitals whether concerning finding solutions to problems or enhance the leaning process or benefiting from knowledge in the future or enhance innovation.

Besides, we observe that all knowledge management processes have a negligible effect on meeting the above objectives, which reveals to that the selected hospitals must consider knowledge as a priority in their business activities to meet their objectives.

Also, we observe that analyzing the needs of the hospitals is an incentive to care and manage the knowledge properly and that innovation in hospitals enhances the position of the hospital in the sector.

IMPLICATION TO RESEARCH AND PRACTICE

The analysis of this study shows that knowledge management (KM) has a significant effect on organizational innovation (OI) in the hospital sector in Beirut and its suburbs. Also, it is important to have an organizational learning in the culture of the hospital to enhance the developing of creative ideas. And this study shows that the presence of collaborative and learning culture in the hospital has a significant effect on achieving innovation.

CONCLUSION

At the end of this study, we now know that knowledge is a very important issue in all business sectors whether trading or service sector is, and it must consider the strategic goals of the organization.

In this study, we observe that the general relationship between knowledge management and innovation in the selected hospitals is moderate, and this is the normal result since hospital sector is a service sector and knowledge considered as a secondary issue in their business process. But, as we know innovation and development of the hospital are related directly to how hospitals properly care and manage knowledge as a main part of its processes, and this makes hospitals more aware of considering knowledge in their activities.

Also, this study gives us the general perception of the status of knowledge management in the selected hospitals. These hospitals do not focus on knowledge management as a primary and important part in achieving their goals since all the existing relationships are low and need to be improved to better benefit from knowledge management and make these hospitals more innovative.

So, as a result of this study, we conclude that knowledge management is an important issue that must be taken into consideration in all sectors of business since it has a long-term benefit that makes the organization more comparative and specific.

Concerning hospital sector, knowledge management is important in this sector as its importance in any other sector of business, but hospitals must care more about knowledge management and make this concept as a part of the major strategy that must embody in each process they make.

As a conclusion, I observe that there is relationship between knowledge management and innovation, and also between learning and innovation, and this answered the problem statement in this research study in the hospital sector.

REFERENCES

- Abdi Kambiz and Amat A. Senin (2014), "*Investigating the Impact of Knowledge Management on Organizational Innovation: Conceptual Framework*", International research journal of applied and basic sciences: science explorer publications, Vol. 8, Malaysia.
- Abdi Kambiz & Amat Senin Aslan (2015), "The Impact of Knowledge Management on Organizational Innovation: An Empirical Study", Asian Social Science published by Canadian Center of Science and Education, Vol. 11, No. 23, Malaysia
- Al Hayat Hospital. (2004). Retrieved from Al Hayat Hospital Official website: <http://www.alhayat-hospital.com>.
- Al Zahraa Hospital. (2012). Retrieved from Al Zahraa Hospital Official Website: <http://www.alzahraahospital.com>
- American University of Beirut, Medical Center. (2016). Retrieved from American University of Beirut, Medical Center Official website: <http://www.aubmc.org>
- Saint-George. (2016). Retrieved from Syndicate of hospitals website: <http://www.syndicateofhospitals.org.lb>
- Al Rassoul Al Aazam Hospital. (2016). Retrieved from Al Rassoul Al Aazam Hospital Official website: <http://www.alrassoul.org>
- Bahman Hospital. (2016). Retrieved from Bahman Hospital Official Website:<http://www.bahmanhospital.com>
- Al Makassed Hospital. (2014). Retrieved from Al Makassed Hospital Official Website: <http://www.makassedhospital.org>
- Ahmad, H. Saleh (2010), "Development of KM model for Knowledge Management Implementation and Application in Construction Projects", thesis submitted to the university of Birmingham.
- Ahiau, L. U. (2015). "Product Innovation and Organizational Resilience in Public". *European Journal of Business and Management*, Vol. 7, No. 33.
- Azyabi, Fisher et al (2012), "*The Relationship between Knowledge Management Strategic Orientation and Business Strategic Orientation among SMEs*", Australasian Conference on Information Systems, 23rd edition, Australia.
- Baregheh Anahita, Rowley Jennifer, and Sambrook Sally (2009), "Towards a Multidisciplinary Definition of Innovation", Management Decision: Emerald Group Publishing Limited, Vol. 47 No. 8, United Kingdom.
- Ben Zaied R. Maalej and Affes Habib, "*The Relationship between the Sources of Knowledge Management and Organizational Performance*", International Journal of Business & Economic Strategy (IJBES) International Conference on Innovation in Business, Economics & Marketing Research (IBEM'14), Vol. 2, Tunisia.
- Bhojaraju G. (2005), "*Knowledge Management: Why do we need it for Corporates*", Malaysian Journal of Library & Information Science, Vol. 10, no.2, India.
- Boduszek, D. (2012). "Chi-square Test of Independence & McNemar Test". *University of HUDDERSFIELD*.
- Camison Cesar and Lopez A. Villar (2011), "Non-technical Innovation: Organizational Memory and Learning Capabilities as an Antecedent Factors with Effects on

- Sustained Competitive Advantage", *Industrial Marketing Management*, DOI: 10.1016, Spain.
- Cicuto Lorenzo et al. "How Customization and New Product Introduction Rate Impact Knowledge Management Practice", Department of Electrical, Managerial and Mechanical Engineering, University of Udine, via delle Scienze, 208, 33100 Italy.
- Crawford, I. M. (1990), "*Marketing Research Centre for Agricultural Marketing Training in Eastern and Southern Africa.*"
- Downey Jim and Technical Information Service (2007), "*Innovation management*", The Chartered Institute of Management Accountants, Topic Gateway Series No. 38, United Kingdom.
- Eveleens, C. (2010). "*Innovation management; a literature review of innovation process models and their implications*".
- Fernandez I. Becerra and Sabherwal Rajiv (2010), "Knowledge Management Systems and Processes", M.E. Sharpe, ISBN 978-0-7656-2351-5, United States.
- Guadamillas Gómez Fátima and Donate Manzanares Mario, "Knowledge Management Strategies, Innovation and Firm Performance-An Empirical Study", Junta de Comunidades de Castilla-La Mancha, Spain.
- Harwell, M. R. (2015). Research Design in Qualitative/Quantitative/Mixed Methods". *University of Minnesota*.
- Headquarters Department of the Army (2012), "*Knowledge Management Operations*", Field Manual, No. 6-01.1, Washington DC.
- Hidalgo, A. a. (2006). "Innovation management techniques and tools: a review from theory and practice".
- Kör Burcu and Maden Ceyda (2013), "*The Relationship between Knowledge Management and Innovation in Turkish Service and High-Tech Firms*", *International Journal of Business and Social Science*, Vol. 4 No. 4, Turkey.
- Leal-Rodriguez Antonio et al. "*Knowledge Management and the Effectiveness of Innovation Outcomes: The Role of Cultural Barriers*", the electronic journal of knowledge management, Vol. 11, issue 1, Spain.
- Likar Borut et al., (2013), "*Innovation Management*", 1st edition, Institute for Innovation and Technology, Europe.
- Lyttelton Marina du Plessis (2007), "*The Role of Knowledge Management in Innovation*", The Learning Organization, Vol. 10 No.6, South Africa.
- Organization for Economic Co-operation and Development (1996), "*The Knowledge-Based Economy*", GENERAL DISTRIBUTION, OCDE / GD (96)102, France.
- Rezende da Costa Priscila and S. Porto Geciane (2012), "*Innovation Stages and Organizational Resources at Midsized Companies in Brazil*", *Future Studies Research Journal*, Vol. 4 No.2, Brazil.
- Rezghi H. Shirsavar (2015), "Relationship between Knowledge Management and Organizational Memory in Islamic Azad University", *American institute of science*, Iran.
- Riederer P. John et al. (2005), "Innovation Management –An Overview and some Best Practices" Vol. 4 No. 3, *Cooperative Computing & Communication Laboratory*, Germany.
- R. King William (2009), "Knowledge Management and Organizational learning", Springer Science and Business media LLC, DOI 10.1007/978-1-4419-0011-1-1, United States.

Sarvary, Miklos (1999), "*Knowledge Management and Competition in the Consulting Industry*", California management Review, Vol. 41, No. 2, California.

Tiwari, R. (2005). "Research Project Global Innovation". *Hamburg University of Technology, Oslo Manual*, 3.

Trochim, W. M. (2008). "Research Methods Knowledge Base".

The University of Bristol, School of Economics, Finance and Management. (2013).
theUniversity of Bristol, School of Economics, Finance and Management.
Retrieved from <http://www.bristol.ac.uk/>.

Youngshin Song et al (2015), "*Methodological Issues in Questionnaire Design*", J Korean Acad Nurs, Vol.45 No.3, korea.

Zaim, Halil, "*Knowledge Management Implementation in IZGAZ*", Journal of economic and social research, No. 8(20), Turkey.

Yuan, Mei (2011), "*An Integrated Knowledge Management Framework for Managing Sustainability Knowledge in the Australian Infrastructure Sector*", thesis submitted to the Queensland University of Technology, Australia.