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Success Factors of Knowledge Management in Universities (A Case Study: Jordanian Private Universities)

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Abstract: The Knowledge Management (KM) implementations are important to improve the working outcomes inside universities. There are many limitations face the adoption of KM implementations such as the validity of success factors of KM inside universities. There are many success factors need to be ensured in working environments to provide efficient implementations of KM i.e. organizational culture and IT infrastructures. The purpose of this study is to investigate the success factors of KM in Universities. The research sample consists of 64 academicals employees in information technology colleges in Jordanian private universities. The data collected using questionnaire to investigate five KM success factors; (1) organizational culture, (2) effective & systematic processes, (3) knowledge measures, (4) knowledge organization and (5) knowledge systems infrastructure. Also, the collected data analyze the most important determinates i.e. qualification levels and experience years that related with KM implementations. The significance results show that the universities environments contain the most important successful factors of KM implementations and there are many determinates need to be covered by universities to ensure best adoption of KM implementations.

Key words: Knowledge Management · Knowledge Adoption · Success Factors · Knowledge Management determinates · Universities

INTRODUCTION

Many researchers try to standardize the knowledge definition to clarify the knowledge styles, types and implementations. In a modern definition, knowledge is the value chain of related information that insights in working environment in order to support the businesses outcome performance [1]. The accurate knowledge leads to maximize the benefits of businesses i.e. accurate working activities satisfy the customers' needs. In contrast, the inaccurate knowledge may waste the resources i.e. expenses due to working mistakes [2]. The growth of knowledge resources is one from the most important challenges of knowledge management inside organizations. The large volume of knowledge required careful management of knowledge to share the most efficient knowledge that deal with working strategies and activities [3]. Thus, the theory of knowledge management formatted [4]. [5] defined the Knowledge Management (KM) as a range of practices used in an organization to create, capture, collect, transfer and apply of what people in the organization know and how they know what people in the organization known. Thus, the main aim of KM is to share the right knowledge that retrieved from various resources to right person at right time to improve the businesses values.

There are many methods; techniques and system of KM were developed to support the KM activities inside working environments. However, the KM implementation may fail or may not be efficient due to weakness of the KM implementations success factors in working environment such as IT infrastructures and organizational culture [1]. The KM implementations effected by various factors that control the achievement of organizational objectives of KM adoption. Thus, the baseline of success KM implementations is analyzed whether the working environments have the KM success factors or not [6, 7]. However, these factors may different from one organization to other organizations based on the organization situations.

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The KM implementations in higher academicals institutions i.e. universities are very important. The universities are considered as the main source of preparing the human skills to support the organizations in various sectors. The universities concern about developing the skills and knowledge of undergraduate and postgraduate students to ensure efficient outcomes of the learning processes. The classrooms are the basement of transfer the knowledge from lecturers to students and the lecturers responsible about prepare accurate materials using many knowledge sources. The learning processes and materials reflect the university strategies and planning. The lecturers represent main element of transfer accurate knowledge to develop the students' skills and ensure the university learning strategies; the universities support the lecturers' knowledge through provide accurate explicit knowledge sources [8, 9, 10].

The main aim of this study is to analyze the main successful factors of knowledge management implementation in Jordanian private universities in order to support their decisions of KM implementations adoption.

Related Works: KM processes and activities could be implemented efficiently inside organizations to maximize the competitive advantage and overall performance; this achievement can utilize through implement many factors that mainly affect the KM processes. These factors have a significant impact on the success of KM implementation inside any organization. Therefore, the efficiency level of KM adoption is controlled by many success factors.

[1] surveyed 75 Iranian employees in financial company to determine the most important success factors of KM; the researchers founded that the organizational culture, KM architecture, systematic infrastructures, originations strategies are the most important success factors of KM implementations. On the other hand, Monavvarian & Khamda (2010) analyzed the successful factors of KM implementations in financial Companies. According to their study, the organizational culture, organizational KM, IT infrastructures and knowledge measurements are the most success factors of KM implementations.

Heaidari *et al*. (2011) focused on the success factor of KM in Agriculture organizations. Heaidari results show that there are 4 successes factors; (1) culture organizational, (2) knowledge measurement, (3) employee involvement of IT and (4) Knowledge structure. On the other hand, [6, 7] mentioned that the organizational culture, organizational infrastructures, KM structure and knowledge evaluation are necessary factors to ensure efficient KM implementations in various businesses fields.

[13] founded that the most success factors of KM implementation in businesses organizations are; (1) integrated technical (2) infrastructure, (3) organizational culture, (4) motivation and (5) commitment of users and senior

KM Success Factors in Universities : Universities are considered as the most critical organizations that require activating the KM implementations. The urgent demand to implement the KM in the universities is demonstrate through the fact that universities are the most places that create, use and reuse the knowledge rabidly and continuously. Thus, the knowledge need to manage carefully and systematically to achieve its goals which are increase the level of education and innovation in the first place and to maximize the overall performance in the second place. However, these goals and objectives require more than implement the KM by managing the knowledge under the KM processes and activities. Moreover, it required implementing many successful factors that influence the KM implementations successfully. [14] founded that the most important factors that related to KM success implementations in universities are organizational culture, organizational KM, IT infrastructures and knowledge measurements; the same factors of [14] adapted by [15] and [16]. Table 1 presents various studies that analyze the success factors of KM implementations in universities.

Research Purpose: This research conduct under the scope of, what are the successes factors of KM implementation in Jordanian private universities? And what are the important determinates of KM implementations in Jordanian universities? The literature review demonstrates the importance of successful factors in general organizations and narrow down to universities as specific organizations in order to ensure that the Jordan private universities have the main basement of KM success factors. However, KM may not implement efficiently due to the lack of success factors that lead to minimize the KM implementations performances in universities.

Table 1: Success Factors of KM Implementations in Universities

Source	Scope	Success Factors of KM Implementations
[17]	Austin University in America	•Rewarding of knowledge sharing •Employees culture •Organizational Motivation
[18]	Various universities in Iraq	•Leadership Commitment •Strategic Planning •Continuous Improvement •Process Focus •Academic Staff Involvement •Training Learning •Reward Recognition
[19]	Various universities in Indonesia	•Vision •Culture •Management support •Technology •Education and motivation •Maintenance
[20]	Develop theoretical frame work of KM implementations in universities.	•Culture •ICT infrastructure and services •Systematical processes.
[21]	99 higher learning institutions located in the Malaysia	•Organizational culture. • Top management leadership

The organizational culture is important factor to ensure the employees ability and awareness for knowledge management implementations. However, the responsible activities of employees maximize the accuracy of KM implementations. On the other hand, the knowledge measurement is another important factor in KM implementation to evaluate the knowledge resources inside universities. Thus, the employees' needs of knowledge will be evaluated and shared accurately. Furthermore, the organizations could simplify the KM structure and provide focused and valuable knowledge at real time. Also, the KM implementations should deal with organizations strategies as important factor to provide the managers visions and plans to maximize the performances of organization services and activities which lead to maximize the return profits. Additionally, the IT infrastructures are important factor to improve the various KM implementations automatically. Thus, these factors need to be implemented successfully in universities to ensure the success of KM implementations in universities such as high competitive rank, save the wasted resources and maximize the overall income of the company.

MATERIALS AND METHODS

This study adopt [1] questionnaire which adopted in various studies; [11], [15] and [16] in order to analyze the KM success factors in different organizational environments. The questionnaire items used to recognize the reality of knowledge management in private universities in Jordan. These items are represented five factors which are; (1) organizational culture, (2) effective& systematic processes, (3) knowledge measures, (4) knowledge organization and (5) knowledge systems infrastructure. The items questions are designed based on five-point likert scale (strongly agree, agree, disagree, neutral, strongly disagree and not applicable). Table 2 shows the format of the questionnaire main factors.

Data Collection: The sample of the study is composed of 70 academic staff in IT faculties in four private universities in Jordan, which are: Jadara University, applied science university, Petra University and national Amman University on the second semester of the academic year 2013/2014. The total number of the sample of the study is 70 members who composed a percentage of 28.6% of the whole community. The researcher distributed the questionnaire to 70 academic members but 64 one replies and 6 were invalid to use in the questionnaire analysis. The total valid respondent is 64 which composed a percentage (26.1%) of the community of the study. This percentage is considered suitable to represent the community of the study (Glenn 2013).

The processes of writing down the questionnaire is conducted according to certain standards residents in the study instruments based on five-point likert scale ((1) SA for strongly agree, (2) A for agree, (3) N for neutral, (4) D for disagree, (5) SA for strongly disagree and (0) NA for not applicable).

Table 2: Format of the Instrument

Study Factor	Items Number	Items Position
Organizational Culture	10	1-10
Effective& Systematic Processes	6	11-16
Knowledge Measurement	5	17-21
Organizational Knowledge	7	22-28
Infrastructure	3	29-31
Total	31	1-31

RESULTS AND DISCUSSIONS

This section will provide the analysis of the collected data in the contexts of study purposes.

Table 3: Internal compatibility for questionnaire factors

Study Factor	Pearson Correlation
Organizational Culture	0.782 **
Effective& Systematic Processes	0.774 **
Knowledge Measures	0.763 **
Knowledge Organization	0.751 **
Infrastructure	0.748 **

** There is statically significant ate (0.01)

Table 4: Organizational Culture

Item No.	Item (descending according mean)	Mean	Level
5	The design of Knowledge is seen as strength.	5.50	Very High
4	Knowledge sharing is seen as strength and knowledge hoarding as a weakness.	5.38	High
2	Failure is seen as an opportunity to learn.	5.03	High
3	Change is accepted as part of working life.	4.94	High
6	Good knowledge management behavior like sharing, reusing knowledge is actively promoted on a day-to-day basis.	4.75	High
8	People at all levels do recognize knowledge as a key resource in their daily works.	4.63	High
1	Recording and sharing knowledge is a routine like any other daily habits for the employees	4.59	High
9	People in the organization are aware of the need to proactively manage knowledge assets	4.53	High
10	There is a knowledge base used to share knowledge in an informal manner (non-routine, personal and unstructured way.	4.28	Medium
7	Bad knowledge management behavior is actively discouraged.	4.24	Medium
	Average	4.79	High

Factors Internal Compatibility: The researcher examined the internal compatible items of the instrument for each factor in the questionnaire by finding the correlation between each factor and the total degree for all factors. The researcher assures there is no confliction between the factors by using Person correlation as shows in table 3.

As noticed from the table 3, the correlation factor of the internal compatibility for the study factors is between (0.748-0.782) and this is considered high correlation factor and it is indicated the strength of the internal connection for the items of each factor in the questionnaire.

Factors Discussion: This section discusses the findings of the study questionnaire for the study main factors; (1) organizational culture, (2) effective& systematic processes, (3) knowledge measurement, (4) knowledge organization and (5) infrastructure.

Discussion Of Organizational Culture Factor: The aim of this factor is to find the level of organizational culture in Jordan private universities among IT college's employees in order to implement the knowledge management in their working environments. To measure this factor, the means and standard deviations were calculated for all the items that concerns this factor. Table 4 present the statistical analysis of this factor.

As noticed from table 4, the range of the items that represent organizational culture factor is (4.24-5.50), the means average is (4.79). According to criteria, the level of the organizational culture in IT colleges in Jordan private universities is considered high. And there are differences in responses on the items of this factor according to proposed criteria as the items come in very high, high and medium levels.

The item that comes in very high responses is Item number 5 (The design of Knowledge is seen as strength) come firstly with a mean of (5.50). The items that come in high responses are; Item number 4 (Knowledge sharing is seen as strength and knowledge hoarding as a weakness) come secondly with a mean of (5.38), Item number 2 (Failure is seen as an opportunity to learn) come thirdly with a mean of (5.03), Item number 3 (Failure Change is accepted as part of working life) come fourthly with a mean of (4.94), Item number 6 (Good knowledge management behavior like sharing, reusing knowledge is actively promoted on a day-to-day basis) come fifthly with a mean of (4.75), item number 8 (People at all levels do recognize knowledge as a key resource in their daily works) come sixthly with a mean of (4.63), item number 1 (Recording and sharing knowledge is a routine like any other daily habits for the employees) come seventhly with a mean of (4.59) and item number 9 (People in the organization are aware of the need to proactively manage knowledge assets) come eighthly with a mean of (4.53). The items that come in medium responses are; Item number 10 (There is a knowledge base used to share knowledge in an informal manner) come 9thly with a mean of (4.28) and Item number 7 (Bad knowledge management behavior is actively discouraged) come 10thly with a mean of (4.24).

Discussion of Effective and Systematic Processes Factor: The aim of this factor is to find the level of knowledge management systematic processes in Jordan private universities according to the opinions of IT college's employees. To measure this factor, the means and standard deviations were calculated for all the items that concerns this factor.

Table 5: Effective and Systematic Processes

Item No.	Item (descending according mean)	Mean	Level
12	The organization uses Effective cataloguing and archiving procedures for knowledge management	5.25	High
11	Key knowledge is identified, preserved and maintained	5.09	High
13	The organization concerns regarding Training and development programs in Knowledge Management from point of recruitment	5.06	High
16	In the day-to-day working environment, it is easy to find the right knowledge	5.00	High
14	Knowledge resources are legally protected	4.85	High
15	There is a duplication of effort in knowledge management in the organization	4.84	High
	Average	5.02	High

Table 6: Measures of Knowledge

Items No.	Item (descending according mean)	Mean	Level
17	Knowledge objectives forming, results measurement and feedback are designed	5.27	High
21	Knowledge are evaluated in the organization	5.16	High
19	There is a constant flow of new ideas within the organizational context	5.09	High
20	The organization is committed to provide resources for training and development of individuals.	5.03	High
18	Organization employees are committed to continual improvements	4.97	High
	Average	5.10	High

As noticed from table 5, the range of the items that represent systematic processes factor is (4.84-5.25) and the means average is (5.02). According to criteria, the level of the effective and systematic processes in IT colleges in Jordan private universities is considered high. And all responses on the items of this factor according to proposed criteria are high levels.

All of the items are come in high responses as the following: Item number 12 (The organization uses Effective cataloguing and archiving procedures for knowledge management) come firstly with a mean of (5.25), Item number 11 (Key knowledge is identified, preserved and maintained) come secondly with a mean of (5.09), Item number 13 (The organization concerns regarding Training and development programs in Knowledge Management from point of recruitment) come thirdly with a mean of (5.06), Item number 16 (In the day-to-day working environment, it is easy to find the right knowledge) come fourthly with a mean of (5), Item number 14 (Knowledge resources are legally protected) come fifthly with a mean of (4.85) and item number 15 (There is a duplication of effort in knowledge management in the organization) come sixthly with a mean of (4.84).

Discussion Of Measures Of Knowledge Management Factor: The aim of this factor is to analyze the importance of the methods of knowledge management measures for IT college's employees in Jordan private universities. To measure this factor, the means and standard deviations were calculated for all the items that concerns this factor.

As noticed from table 6, the range of the items that represent measures of knowledge management factor is (4.97-5.27) and the means average is (5.10). According to criteria, the level of the measures of knowledge management in IT colleges in Jordan private universities is considered high. And all responses on the items of this factor according to proposed criteria are high levels.

All of the items are come in high responses as the following: Item number 17 (Knowledge objectives forming, results measurement and feedback are designed) come firstly with a mean of (5.27), Item number 21 (Knowledge are evaluated in the organization) come secondly with a mean of (5.16), Item number 19 (There is a constant flow of new ideas within the organizational context) come thirdly with a mean of (5.09), Item number 20 (The organization is committed to provide resources for training and development of individuals) come fourthly with a mean of (5.03) and Item number 18 (Organization employees are committed to continual improvements) come fifthly with a mean of (4.97).

Discussion Of Knowledge Organization Factor: The aim of this factor is to find the level of organizing and managing the knowledge in Jordan private universities for IT college's employees. To measure this factor, the means and standard deviations were calculated for all the items that concerns this factor.

As noticed from table 7, the range of the items that represent knowledge organization factor is (4.72-5.59) and the means average is (5.04). According to criteria, the level of the knowledge organization in IT colleges in Jordan private universities is considered high. And there are differences in responses on the items of this factor according to proposed criteria as the items come in very high and high levels.

Table 7: Knowledge Organization

Items No.	Item (descending according mean)	Mean	Level
25	The organization believes in the role of employees to spread best practices and ideas	5.59	Very High
24	Knowledge management is a formal function area in the organization	5.26	High
26	The organization grants the employees free access to knowledge base	5.00	High
28	The organization systematically assesses its future knowledge requirements and executes plans to meet them	4.97	High
27	There is a defined budget for Knowledge Management	4.91	High
22	Top management recognizes Knowledge Management as an important part of the business strategy	4.81	High
23	There is a top management representation for Knowledge Management	4.72	High
	Average	5.04	High

Table 8: Systems and Infrastructures

Item No.	Item (descending according mean)	Mean	Level
31	Do you know who your best experts are for different domains of key knowledge?	5.38	High
30	Does your firm have a mechanism in place that allows the sharing of knowledge among the employees?	5.25	High
29	Does your organization have systems in place that allow the content and knowledge management.	5.06	High
	Average	5.23	High

The only item that come in very high responses is Item number 25 (The organization believes in the role of employees to spread best practices and ideas) come firstly with a mean of (5.95). On other hand, the items that come in high responses are; Item number 24 (Knowledge management is a formal function area in the organization) come secondly with a mean of (5.26), Item number 26 (The organization grants the employees free access to knowledge base) come thirdly with a mean of (5), Item number 28 (The organization systematically assesses its future knowledge requirements and executes plans to meet them) come fourthly with a mean of (4.97), Item number 27 (There is a defined budget for Knowledge Management) come fifthly with a mean of (4.91), item number 22 (Top management recognizes Knowledge Management as an important part of the business strategy) come sixthly with a mean of (4.81) and item number 23 (There is a top management representation for Knowledge Management) come seventhly with a mean of (4.72)

Discussion of Systems And Infrastructures Factor: The aim of this factor is to find the level of knowledge equipments and infrastructure in Jordan private universities for IT college's employees. To measure this factor, the means and standard deviations were calculated for all the items that concerns this factor.

As noticed from table 8, the range of the items that represent systems and infrastructures factor is between (5.06-5.38), the means average is (5.23) and the standard devotions average is (1.050). According to criteria, the level of the systems and infrastructures in IT colleges in Jordan private universities is considered high. And the responses on the items of this factor according to proposed criteria are high and levels.

Item number 31 (Do you know who your best experts are for different domains of key knowledge?) come firstly with a mean of (5.38). Item number 30 (There Does your firm have a mechanism in place that allows the sharing of knowledge among the employees?) come secondly with a mean of (5.25) and item number 29 (Does your organization have systems in place that allow the content and knowledge management.) come thirdly with a mean of (5.06).

Demographic Data Significance: This section analyzes the significance differences between the responses of the respondents due to many variables which are; qualifications levels, experiences levels, computer skills and daily use of search engines. To find the statistical significances T-test was used with the variables gender and computer skills and ANOVA was used with the other variables.

Computer Skills Variable: Table 9 shows that there are significance differences at level (0.05) among the means of responses of IT college's employees in Jordan private universities due to computer skills. The value of calculated (T) is (3.266) and the differences comes in favor of good computer skills over weak computer skills as the means for the employees who have good computer skills (135.82) while for the employee who haven't good computer skills (116.50).

Table 9: T Test of Computer Skills Variable

Gender	Mean	Degree of Freedom	T Value	Significance Level
Existed	135.82	62	3.266	0.002 **
Not Existed	116.50			

** Significance at (0.05)

Table 10: Scheffe Test of Qualification Levels.

Qualification	Average	Master	Assistance Professor	Associated professor
Master	128.33	-	-	-
Assistance Professor	134.29	6.00	-	-
Associated professor	148.67	20.34	14.34	-

Table 11: Scheffe Test of Experience Levels

Experience years	Average	<2	2-4	4-7	>7
<2	108.43	-	-	-	-
2-4	134.38	25.95	-	-	-
4-7	136.07	27.64	-	-	-
>7	138.88	30.45	-	-	-

Table 12: Scheffe Test of daily use of search engines

Daily Use of Search Engines	Average	Rarely	Sometimes	Often
Rarely	120.30	-	-	-
Sometimes	130.75	10.45	-	-
Often	139.90	19.60	9.15	-

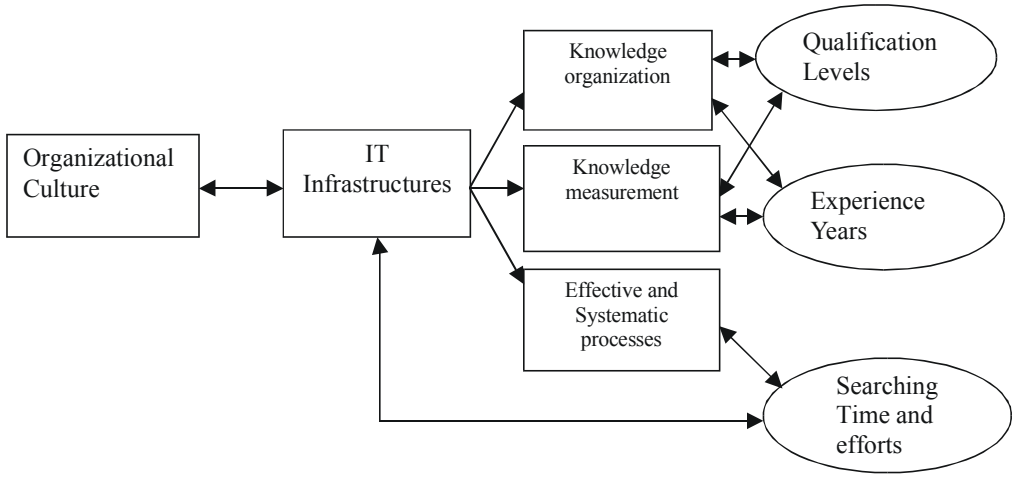

Fig. 1: Interconnection between KM Success Factors and determinants

Qualification Variable: To find the deviations of the differences of the participant's responses mean post comparisons was conducting and for this purpose (scheffe) test was used as illustrative in the table 10.

As noticed from the post comparisons of participant's responses means according to qualification variable, there is a statistical significance differences at (0.05) in favor of those who's qualification is associated professor over those who's qualifications is assistance professor or master. We noticed also, there is a statistical significance difference at (0.05) in favor of those whose qualification is assistance professor over those who's qualifications is master.

Experience Level Variable: To find the deviations of the differences of the participant's responses mean post comparisons was conducting and for this purpose (scheffe) test was used as illustrative in table 11.

As noticed from the post comparisons of participant's responses means according to experience years variable, there is a statistical significance differences at (0.05) in favor of those whose experience level is more than 7 years over those whose experience levels less than two years, between (2-4) years or between (4-7) years. We noticed also, there is a statistical significance difference at (0.05) in favor of those whose experience level is between (4-7) years over those whose experience levels less than two years or between (2-4) years.

Daily Use Of Search Engines Variable: To find the deviations of the differences of the participant's responses mean post comparisons was conducting and for this purpose (scheffe) test was used as illustrative in table 12.

As noticed from the post comparisons of participant's responses means according to daily use of search engines variable, there is a statistical significance

differences at (0.05) in favor of those whose search engines daily use is often over those whose search engines daily use is sometimes or rarely. We noticed also, there is a statistical significance difference at (0.05) in favor of those whose search engines daily use is sometimes over those whose search engines daily use is rarely.

Results: The KM implementations could be success in Jordanian private universities due to efficient factors basements in these universities environments. The main success factors that analyzed are as the following:

- Organizational culture: the employees have the motivation to adopt the KM implementation in their daily working activities.
- Knowledge measurement factor to measure the efficient knowledge that satisfies the employees' need of knowledge based on their knowledge levels.
- Knowledge Organization factor which represent the knowledge classification based on knowledge characteristics.
- Effective& Systematic Processes factor to inquire, collect, retrieve and share the knowledge.
- Infrastructures factor which represent the computer software and hardware to manage and process the knowledge.

The employees' culture is the main basement of this study; the employees' culture could be effective to activate the KM implementations successfully. The IT infrastructure is important factor to apply the KM implementations efficiently through IT applications and services. The knowledge measurement factor is important to manage the knowledge resources based on adaptive measurement variables of knowledge levels. Knowledge organization, systematical processes factors ensure the success of knowledge management implementations through efficient processes and robust structure. However, the following determinates are important in knowledge management implementations in Jordanian private universities:

- Distinguish between qualification levels in knowledge management implementations. Thus, the knowledge can be measured and managed based on the differences between employees' qualification levels (measurement and organizational factors).
- The implementation of knowledge management could be effected by the differences of employees' experience years. Therefore, the knowledge can be measured and managed based on the differences between employees' qualification levels (measurement and organizational factors).
- The employees spend time of knowledge searching based on current knowledge systems of their universities. The systematic processes and IT facilities could be developed effectively to speed up the knowledge searching time and minimize the knowledge searching efforts (systematic processes and IT factors).

Figure 1 illustrates the interconnections between the success factors and determinants of KM implementations in Jordanian private universities.

CONCLUSION

The Jordanian private universities have the most important successful factors of KM implementations; (1) organizational culture, (2) effective& systematic processes, (3) knowledge measures, (4) knowledge organization and (5) knowledge systems infrastructure. The universities should be aware of many KM implementations determinates such as distinguished between qualification levels, the differences of employees' experience years, the effective IT infrastructures. Therefore, the Jordanian private universities represent efficient environments to adopt the KM implementations.

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