


INFORMATION SYSTEMS EFFECT ON ENABLING KNOWLEDGE MANAGEMENT

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| ARTICLE INFO | ABSTRACT |
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| Article history: | Purpose: This research aims to neutralize the impact of information systems on enabling knowledge management in the banking sector in Syria. |
| Received 04 October 2022 | Theoretical framework: IT resources positively affect knowledge management capability. As studies (Watson 2007; O'Brien & Marakas 2011; Mao et al., 2016) and. We document a relationship between information systems enabling knowledge management in Syrian banks |
| Accepted 06 December 2022 | Design/methodology/approach: This study of measuring this effect was based on the design of a questionnaire distributed to 369 individuals working in Syrian government banks in 2022. |
| Keywords: | Findings: This study concluded that there is a direct impact of information systems on enabling knowledge management, and the technological requirements of information systems have a greater impact than the organizational requirements. The study also showed that there were differences between the answers of the sample members in all the research axes, as it showed the lack of information systems or enabling knowledge management in banks for most workers from the second and third job categories, as opposed to workers from the first job category with great job experience, whose answers were positive towards the two research variables. |
| Information Systems; Knowledge Management; Banks. | Research, Practical & Social implications: This article offers empirical support for theory-based claims and helps create a empirical framework for the success of knowledge management activities. |
|  | Originality/value: Very few research on management level employees' opinions of knowledge sharing in banks have been done in Syria. |
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EFEITO DOS SISTEMAS DE INFORMAÇÃO NA HABILITAÇÃO DA GESTÃO DO CONHECIMENTO

RESUMO

Objetivo: Esta pesquisa visa neutralizar o impacto dos sistemas de informação na viabilização da gestão do conhecimento no setor bancário na Síria.

Referencial teórico: : os recursos de TI afetam positivamente a capacidade de gestão do conhecimento. Conforme estudos (Watson 2007; O'Brien & Marakas 2011; Mao et al., 2016) e. Documentamos uma relação entre sistemas de informação que permitem a gestão do conhecimento em bancos sírios

Desenho/metodologia/abordagem: Este estudo para medir este efeito foi baseado no desenho de um questionário distribuído a 369 indivíduos que trabalhavam em bancos governamentais sírios em 2022.

Resultados: Este estudo concluiu que há um impacto direto dos sistemas de informação na viabilização da gestão do conhecimento, e os requisitos tecnológicos dos sistemas de informação têm um impacto maior do que os requisitos organizacionais. O estudo também mostrou que houve diferenças entre as respostas dos integrantes da amostra em todos os eixos da pesquisa, pois evidenciou a falta de sistemas de informação ou gestão do

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conhecimento nos bancos para a maioria dos trabalhadores da segunda e terceira categorias de trabalho, em oposição aos trabalhadores da primeira categoria profissional com grande experiência profissional, cujas respostas foram positivas para as duas variáveis da pesquisa.

Pesquisa, implicações práticas e sociais: Este artigo oferece suporte empírico para afirmações baseadas em teoria e ajuda a criar uma estrutura empírica para o sucesso das atividades de gestão do conhecimento.

Originalidade/valor: Muito poucas pesquisas sobre as opiniões dos funcionários de nível gerencial sobre o compartilhamento de conhecimento em bancos foram feitas na Síria.

Palavras-chave: Sistemas de informação, Gestão do conhecimento, Bancos.

EFFECTO DE LOS SISTEMAS DE INFORMACIÓN EN LA GESTIÓN DEL CONOCIMIENTO

RESUMEN

Propósito: Esta investigación tiene como objetivo neutralizar el impacto de los sistemas de información para permitir la gestión del conocimiento en el sector bancario en Siria.

Marco teórico: Los recursos de TI afectan positivamente la capacidad de gestión del conocimiento. Como estudios (Watson 2007; O'Brien & Marakas 2011; Mao et al., 2016) y. Documentamos una relación entre los sistemas de información que permiten la gestión del conocimiento en los bancos sirios

Metodología: Este estudio de medición de este efecto se basó en el diseño de un cuestionario distribuido a 369 personas que trabajaban en bancos gubernamentales sirios en 2022.

Conclusiones: Este estudio concluyó que existe un impacto directo de los sistemas de información para permitir la gestión del conocimiento, y que los requisitos tecnológicos de los sistemas de información tienen un impacto mayor que los requisitos organizacionales. El estudio también evidenció que hubo diferencias entre las respuestas de los integrantes de la muestra en todos los ejes de investigación, ya que evidenció la falta de sistemas de información o que permitan la gestión del conocimiento en los bancos para la mayoría de los trabajadores de segunda y tercera categoría laboral, a diferencia de los trabajadores de la primera categoría laboral con gran experiencia laboral, cuyas respuestas fueron positivas hacia las dos variables de investigación.

Implicaciones de la Investigación: este artículo ofrece apoyo empírico para afirmaciones basadas en la teoría y ayuda a crear un marco empírico para el éxito de las actividades de gestión del conocimiento.

Originalidad/valor: En Siria se han realizado muy pocas investigaciones sobre las opiniones de los empleados de nivel gerencial sobre el intercambio de conocimientos en los bancos.

Palabras clave: Sistemas de información, Gestión del conocimiento, Bancos.

INTRODUCTION

Knowledge management plays an important role in various organizations, no matter how diverse their fields of work are in the business world today, as they improve the utilization of the expertise and skills of human resources available in the organization, which supports appropriate decision-making by the management at all levels, and also enhances the position of the establishment or foundation in the market. However, despite the advantages and importance of knowledge management, there are several challenges and obstacles it faces, in addition to being affected by many factors that can contribute to its enhancement. In this study, the Author will highlight the importance of knowledge management and identify the impact of information systems on enabling knowledge management in the banking sector in Syria.

The success of organizations mainly depends on the quality of knowledge that they apply in their main activity processes, considering that the possession of knowledge and information represents the contributing source of wealth in modern economies which leads to

achieving valuable benefits for the organization, and greatly supports the decision-making in it. The banking sector in Syria has suffered from the weakness in making decisions based on correct knowledge and information during the war period; and perhaps the most prominent aspect of this weakness emerged through the decisions issued to address the issue of non-performing loans which amounted to about (300) billion Syrian pounds in 2019 according to the Syrian commission of financial markets and securities. A series of contradictory decisions were issued starting with both the rulings No. /28/ and /52/ in April 2017, including several restrictions on the decision to grant bank credit, only to be followed by the ruling No. /172/ of 2018 retracting both of the previous rulings, followed by the ruling on 11/6/2020 to stop granting bank credit in Syrian banks, only for this ruling to be also retracted with several restrictions on 9/9/2020; and this series of rulings is still an ongoing issue until the date of preparing this research.

Hence, a knowledge management system in the banking sector is substantial to support it, and which needs databases to support this management.

And since information systems are also among the auxiliary factors in the process of decision support, as emphasized by (Al-Emran, et al. 2018, 184) and (Alwan, 2019) and other studies that emphasize the importance of information systems in supporting decision-making and the success of organizations, the following question has arised:

What is the impact of information systems on enabling knowledge management in the Syrian banking sector?

The importance of the research stems from the importance of the sector that it deals with, given the role it plays in driving the growth of the Syrian economy that has been damaged by the effects of the war (Suliman & Khwanda, 2020).; in addition to the importance of knowledge management in improving performance in banks. Having workers with modern technologies isn't enough to improve performance and benefiting from them- it is necessary to manage the knowledge in the organization to ensure the optimal use of its technical and knowledge resources (Monteiro, et al. 2022, 3); besides the role of knowledge management in creating competitive advantages and supporting creative thinking in organizations (Alzabari et al., 2019). Resulting in the importance of this research in studying one of the factors that can contribute to enabling knowledge management in the organizations. The research aims to trajectory of the research community towards the information systems and enabling knowledge management and studying the impact of information systems on enabling knowledge management in the Syrian banking sector.

PREVIOUS STUDIES

Study of (Shanshouna & Al-Zahra, 2018) aims to identify the conjoint use between information systems and knowledge management in achieving organizational creativity for Sonatrach, the regional production directorate –Hassi Rmel district- as one of the leading institutions in the fuel sector. One of the most prominent results of this study is that there is a significant effect of information systems on the dimensions of organizational creativity. In addition, there is a significant effect of knowledge management on the dimensions of organizational creativity. The study also found a significant combined effect of both information systems and knowledge management on organizational creativity achieved in Sonatrach Foundation. Study of (Khaled & Al-Zaidi, 2012) aimed to demonstrate the impact of management information systems on knowledge management processes in Jordanian ministries and to identify the respondents' attitudes towards management information systems and knowledge management processes. And to achieve these goals, a questionnaire was designed and distributed to a sample size of (556) government employees. The respondents' attitudes to the dimensions parts of (management information systems) came to a high degree, and their importance came in descending order as follows: (devices and equipment, databases, software, telecommunication, measures, and finally human resources).

Also, the respondents' attitudes to the dimension's parts of (knowledge management processes) came to a high degree, and their importance came with the following ranking in descending order as follows: (knowledge storage, knowledge application, knowledge acquisition, knowledge distribution, knowledge identification, and finally knowledge generation). The study also found a statistically significant impact of the dimensions of management information systems (software, procedures, human resources, and telecommunication) on knowledge management processes.

Study of (Al-Emran, et al. 2018) aims to review and shed light on knowledge management process studies related to information systems in order to comprehensively analyze 41 research articles published in journals from 2001 to 2018. The main findings of this study indicate that knowledge sharing is the most frequent knowledge management process studied, followed by knowledge acquisition and knowledge application, while most of the studies that dealt with the effects of knowledge management processes focused on researching the impact of knowledge management processes on electronic business systems, knowledge management systems and information systems respectively. In addition, most of these studies adopted the use of questionnaire surveys which were found to be the primarily relied research method for data collection in the context of knowledge management and information systems,

which were answered primarily by executives and managers in government institutions. Moreover, most of the studies that were analyzed and had a positive outcome for the impact of knowledge management on information systems were conducted in China.

Study of (Moreno and Cavazotteb 2015) focuses on how an individual's particular work context, job characteristics, and knowledge-related job requirements affect the relationship between task-technology fit (TTF) and the use of information systems (IS) in knowledge management activities. The literature on Knowledge Management (KM) and Knowledge Management Systems (KMS) is reviewed to identify relevant constructs and their dimensions. Based on this analysis, the research suggests that providing appropriate IT tools that fit tasks alone is no guarantee that they will be employed to leverage the acquisition, transfer and reuse of knowledge. Certain characteristics of jobs, driven by particular work contexts, generate greater need and opportunity for knowledge use. These latter factors moderate the relationship between TTF and actual use of IS for KM purposes: the greater the need and opportunity to conduct knowledge-related activities, the stronger the relationship between TTF and actual IS use.

METHODOLOGY

The analytical approach was followed in this research by collecting the necessary data for the study and making use of references and previous studies related to the research topic, and the data were analyzed using the software SPSS for statistical data analysis to study the correlation between different variables in our study. The descriptive approach was also used when describing the current situation in the banking sector throughout the research variables by analyzing the information collected and studied. The research uses the following hypotheses:

H1: There's a positive impact of information systems on enabling knowledge management in the Syrian banking sector, which derives two hypotheses:

H01: There is a positive impact of the regulatory requirements of information systems on enabling knowledge management in the Syrian banking sector

H02: There is a positive impact of the technological requirements of information systems on enabling knowledge management in the Syrian banking sector

H2: There are statically significant differences between the mean sample answers on the information system axis according to the job category and job experience.

H3: There are statically significant differences between the mean sample answers on the axis of enabling knowledge management according to the job category and job experience.

Research Variables

The independent variable is information systems, which branches to (organizational requirements for information systems, and technological requirements for information systems), while The dependent variable is enabling knowledge management.

The Research Community and Sample

The research community includes all the workers from the first, second, and third categories of Syrian government banks accounting for (9218) workers (SMF, 2019), distributed among six banks and their branches in Syrian governorates which are (Commercial Bank of Syria, the Industrial Bank, the Real Estate Bank, the Agricultural Cooperative bank, Savings Bank, Popular Credit Bank), and a single random sample of (369) individuals was selected according to Morgan's tables (Krejcie and Morgan 1970, 310), which were selected from the two branches of Savings Bank in Hama Governorate (40 individuals), the Popular Credit Bank branch in Tartous Governorate (80 individuals), the two branches No. (4) and (6) in addition to the central administration of the Commercial Bank in Damascus Governorate (140 individuals), the Real Estate Bank branch in Lattakia Governorate (50 individuals), the Agricultural Bank branch in Homs Governorate (14 individuals) and the Industrial Bank branch in Aleppo Governorate (45 individuals).

Research's Temporal and Spatial Limitations

The research is being conducted in the middle of 2022, within the scope of government banks in the Syrian Arab Republic.

THE THEORETICAL FRAMEWORK OF THE STUDY

First: Information Systems (Definition - Importance - Types and Operating Systems)

Since its appearance in the second half of the last century, this concept has been addressed by a large number of Authors such as (Thijel et al., 2018; O'Brien & Marakas 2011; Watson 2007). These definitions all agreed that information systems are mechanisms that ensure an organized set of people, equipment, procedures, software, and telecommunication networks and databases, works manually, mechanically, semi-automatically or automatically to collect, store, classify, process and analyze data to produce the information needed and then transmit and distribute it to beneficiaries in the organization to help them in planning, organizing, controlling, coordinating and decision-making in the organization.

Ideal information systems ensure integration between elements of the system so that the outputs of each partial system are inputs to another partial system, which allows the integration of these sub-systems to achieve their general goal, as well as ensuring integration with the external environment, in addition to reaching the balance in providing the beneficiaries with information necessary to accomplish the goals required and to achieve the balance between information accuracy and the cost of obtaining it, which leads to providing the correct and accurate information to the right person, with the required quantity on time, and with the necessary confidentiality due to its importance and sensitivity. (O'Brien & Marakas 2011; SAEED et al., 2022). This information is classified in terms of concepts that it is based upon and its capacity to (Talab et al., 2017):

1. Old information systems: The systems that don't use any technical means.
2. Modern information systems: The systems that use information technology in their work.
3. Integrated information systems: This applies when there is more than one system in the organization.
4. Comprehensive information systems: The systems that are based on the rules of system methodology, and the rules of comprehensive data.

Information systems are also classified according to their field of applications into (Buried, 2016):

Data operation systems, knowledge systems, human resources information system, management information systems, senior management systems, information processing systems, decision-making support systems, and office information systems), whereas it was classified by (Al-Taie et al., 2017) according to its operation methods into (manual systems, semi-automated systems, and automated systems).

Regardless of the classification of these systems, they need regulatory requirements that are (the company's strategy, organizations structure, leadership manners, culture, and legal environment), and other technological requirements for it to spread across organizations and work with high efficiency (Al-khoury et al., 2022).

Enabling Knowledge Management

As defined by Weigh in the nineties of the last century, knowledge management is a set of clear and well-defined approaches and processes, aimed at discovering and managing knowledge functions, positive and negative in various types of operations, identifying new products or strategies, and enhancing human resource management as well as several other

goals to be achieved (Abass et al., 2022). This concept has evolved in 2005 by Jennex to include selectively practicing knowledge in past experiences, to make current and future decisions aimed at improving the effectiveness of the organization. He believes that the knowledge system that was created to facilitate the process of capturing, storing, restoring and reusing knowledge has been prepared to achieve organizational goals and to improve organizational and individual decision-making processes.

Therefore, it can be described as the summed up processes that support generating and acquiring knowledge in organizations; in addition to organizing, using, publishing, and transforming important information and expertise that the organization owns which are considered vital to different managerial activities in order to achieve the objectives of the organization, by exchanging information, different visions, ideas and experiences among the organization's components.

Knowledge management in organizations contributes to supporting their flexibility and dynamism to avoid the risks in external environments and helps in achieving production efficiency (Ali et al., 2022). As for enabling knowledge management, it is a mechanism the organization uses to develop its knowledge and stimulate the creation of knowledge within the organization as well as publishing and protecting it. It is also the necessary tools for improving the effectiveness of knowledge management activities. It also serves as the structural or functional conditions in the organization, responsible for the success of knowledge management. Factors of enabling knowledge management work on facilitating the creation, sharing, applying and protecting knowledge within the organization. There is no agreement among researchers on determining the factors of enabling knowledge management. Both (Yang et al., 2009) and (Yeh et al., 2006) adopted the idea that these factors are limited to (leadership, strategy, organizational culture, workers, and technology), while (Cvitanovic et al., 2016) considered that these factors are (the organization's infrastructure and the capacity of each individual). Information communication technology, information management, motivation and stimulation can also be considered among the factors that support enabling knowledge management in the organization (Abd, 2019). Therefore, the Author will consider the most important factors that support enabling knowledge management are (leadership, organizational culture, workers and technology) following the opinions of most researchers in this field, in addition to the fact that these factors are the most appropriate for this study's limitations.

RESULTS AND DISCOUSSIONS

Study Tool Description

The Author has designed the study questionnaire based on the previous theories and studies that examined the concept of information systems and enabling knowledge management, by looking at a number of those studies and choosing some of the phrases that included the study variables (Appendix 1), and we should note that these phrases were formulated to be answered using Likert's scale by choosing one of five answers which are: 5= totally agree, 4= agree, 3= neutral, 2= disagree, 1= totally disagree.

Since the variable that expresses these options is an ordinal scale, and the numbers that will be entered into the SPSS program express these values, the length of the period must be calculated, and here it is 4 divided by 5; where 4 is the number of spaces (from 1 to 2 is the first space, from 2 to 3 is the second and so on) so we have 4 spaces, and the length of the period is equal to 0.8, thus the distribution becomes according to Table (1).

Table (1) Result extraction from Likert scale

| Level | Probable mean |
|------------------|-------------------|
| totally disagree | From 1 to 1.80 |
| disagree | From 1.81 to 2.60 |
| neutral | From 2.61 to 3.40 |
| agree | From 3.41 to 4.20 |
| totally agree | From 4.21 to 5 |

Source: The Author
Scale stability

To ensure the stability of the study tool, the Author performed Alpha Cronbach's test for the study's axes, and the value was (0.982) as shown in Table (2) which is an excellent level of stability according to (Sekaran 2002), so there's no need to remove any of the phrases from the questionnaire at this stage.

Table (2) Alpha Cronbach's stability coefficient for the sample

| Reliability Statistics | | |
|--|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .982 | .983 | 28 |
| Source: Prepared by the author based on the outputs of " SPSS " 24 program | | |

Internal Consistency Validity

In order to measure the internal consistency of the paragraphs, the Author reviewed the correlation matrix between questionnaire items, which shows the correlation coefficients between the rate of each phrase in each axis and the total rate of the axis answers. It showed that the correlation coefficient for each phrase with the total rate of the axis that it is affiliated

with is good if all the results are showing a correlation coefficient greater than (0.5) at a level of significance less than (0.05) which confirms the significance of the internal consistency of the questionnaire phrases, which indicates the affiliation of each phrase to the axis and there is no need to delete any

Table (3) Results of the correlation matrix of questionnaire phrases from it.

| Phrase | Correlation |
|---|-------------|
| Regulatory requirements for information systems | |
| There is a strategic plan for information systems in line with the general strategy of the bank | 0.922 |
| Information is seen as an essential element that supports the decision-making process in the bank | 0.954 |
| Senior management participates in planning, designing, and building the bank's information systems | 0.735 |
| I participate in the design, building, and development of information systems in the bank | 0.921 |
| The current organizational structure helps to quickly exchange information and make better use of it | 0.905 |
| The bank works to provide information protection requirements | 0.943 |
| Sufficient budgets are allocated to build and develop information systems | 0.932 |
| The legislation supports the information system and facilitates its work | 0.9 |
| Technological requirements for information systems | |
| The bank uses modern computer equipment | 0.794 |
| Computer equipment is constantly updated | 0.759 |
| The bank has a huge database available to all employees | 0.73 |
| A modern and effective communication network is available to server the information system in the bank | 0.723 |
| Employees are trained to use computers and deal with databases constantly | 0.599 |
| The information system used has high efficiency, classification, retrieval, and updating of the data and information I need | 0.719 |
| Enabling knowledge management | |
| Bank management clearly supports the implementation of knowledge management | 0.735 |
| The bank's senior leadership recognizes the importance of knowledge management to the success of its business | 0.905 |
| The management of the bank encourages teamwork | 0.895 |
| Knowledge is an essential resource for the bank | 0.655 |
| We share the knowledge and experience at the bank | 0.716 |
| A mistake is an opportunity for everyone to learn and to document the results | 0.953 |
| I gained knowledge from employees from the moment I was hired | 0.792 |
| There is easy access to knowledge in the bank | 0.954 |
| Employees are trained to practice knowledge related tools | 0.872 |
| Workers are motivated to acquire knowledge and enhance tacit knowledge | 0.968 |
| The bank supports IT projects to facilitate the communication of employees | 0.762 |
| The bank provides employees with IT support to search for and acquire new knowledge | 0.894 |
| The bank uses information technology for real-time learning | 0.841 |
| Infrastructures (services, networks, bases) are used to support IT | 0.825 |
| Source: Prepared by the author based on the outputs of the " SPSS 24 "program. | |

Normality test

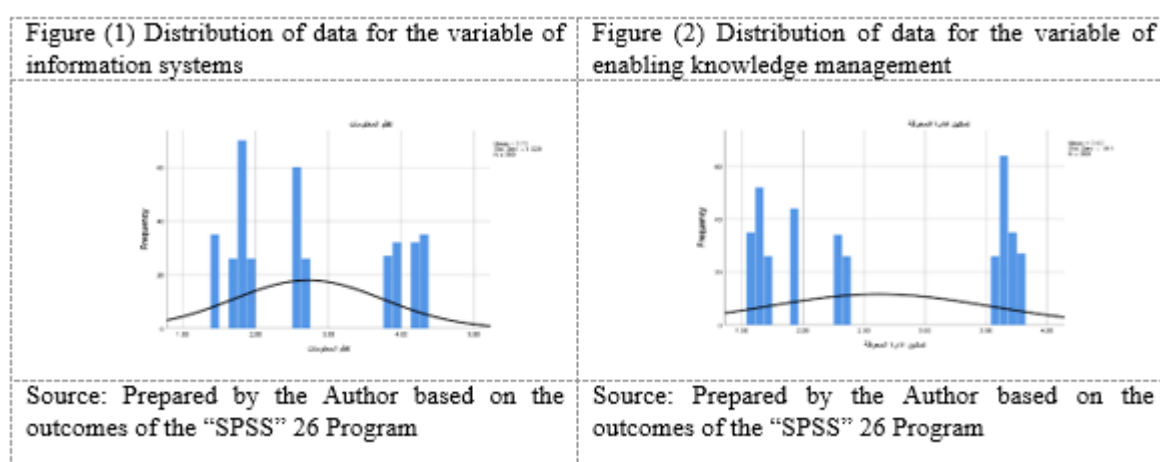
to verify the nature of the data, the frequency distribution diagram was used as shown in the following two figures, where it turns out that the data is normally distributed for both variables where the skewness coefficient is within the acceptable limits between [-1, 1] and its value reached (0.362) as shown in Table (4) for the variable of information systems and (0.197)

for the variable of enabling knowledge management, and the coefficient of Kurtosis is also within the acceptable limits in between [-3, 3] as its value reached (-1.470) and (-1.783) for each of our variables. Also the figures (1 and 2) show that the data is normally distributed in relation with the research variables, thus we adopt the parametric tests accordingly.

Table (4) Results of the normal distribution test for the data

| | | Information Systems | Enabling knowledge management |
|----------|---------|---------------------|-------------------------------|
| N | Valid | 369 | 369 |
| | Missing | 0 | 0 |
| Skewness | | .362 | .197 |
| Kurtosis | | -1.470 | -1.783 |

Source: Prepared by the author based on the outcomes of the “SPSS” 26 program



Analyzing and Presenting the Results of the Study

This part aims to characterize the study sample, describe its variables, test the research hypothesis and present the results. And it will analyze the characteristics of the study sample of (369) workers in the Syrian government banks. Also, this part will deal with the general description of respondents’ answers on all the axes of the questionnaire to know the general orientation of the study sample, and in addition to that, it will discuss the hypotheses of the study and its most important results.

Description of the study sample: Descriptive tests were conducted for the study sample of percentages and frequencies and the results were as follows:

Distribution by job category: as shown in Table (5), the distribution of the research sample concerning job categories shows the predominance of the second category in the research sample, which indicates that this category is considered the technical nerve for working in government banks, and they are usually high school or technical institutes graduates, and this matches with the reality of actual work in most public institutes.

Table (5) Distribution of the study sample according to the job category

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------|-----------|---------|---------------|--------------------|
| Valid | first | 113 | 30.6 | 30.6 | 30.6 |
| | second | 160 | 43.4 | 43.4 | 74.0 |
| | third | 96 | 26.0 | 26.0 | 100.0 |
| | Total | 369 | 100.0 | 100.0 | |

Source: The author

Distribution by job experience: as shown in Table (6), the largest proportion of the research sample belongs to the category whose experience ranges from 5 to 10 years, and it is usually a group of youths who passed their training period and acquired the mechanisms of gaining knowledge in the organization to which they belong.

Table (6) Distribution of the study sample according to the job experience

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------|-----------|---------|---------------|--------------------|
| Valid | Less than 5 years | 127 | 34.4 | 34.4 | 34.4 |
| | 5-10 | 187 | 50.7 | 50.7 | 85.1 |
| | 10-20 | 55 | 14.9 | 14.9 | 100.0 |
| | More than 20 years | 0 | 0 | 0 | 0 |
| | Total | 369 | 100.0 | 100.0 | |

Source: The author

Description of the Study Variables

The study variables describe the general trajectory of the respondents' answers using measures of central tendency (modal, arithmetic mean) and measures of dispersion represented by standard deviation and standard error. And to calculate these measures, after collecting and analyzing respondents' answers using the statistical analysis program IBM SPSS Statistics 26, the Author used the (T) Student test for one sample in order to make sure that the differences between the mean answers about each scale and the mean scale are significant, and therefore the results of these scales represent the entire research community. In order to be able to apply this test, three conditions must be met (the data must be of a gradual or ratio type, the sample must be random and its values are not dependent on each other, and the variable to be tested on its arithmetic mean should follow the normal distribution). It is noted that the three conditions are valid for all of our variables, and therefore the T test can be applied on both variables. By analyzing each of the questionnaire axes, the results were as follows:

Description of the Information Systems Variable

Table (7) shows the descriptive statistics of information systems phrases in its two parts (regulatory requirements and technological requirements) for informational systems and the results of Student test of one sample were as follows:

Table (7) Describes the variable information system One-Sample Test.

| | t | df | Sig. | differences | std. Deviation | Tendency | Mean Difference | 95% Confidence Interval of the difference | |
|--|--------|-----|------|-------------|----------------|----------|-----------------|---|---------|
| | | | | | | | | Lower | Upper |
| There is a strategic plan for information systems in line with the general strategy of the bank | 5.753- | 368 | .000 | significant | 1.32106 | Average | -.39566 | -.5309 | -.2604 |
| Information is seen as an essential element that supports the decision-making process in the bank | 6.458- | 368 | .000 | significant | 1.16073 | Average | -.39024 | -.5091 | -.2714 |
| Senior management ,participates in planning designing, and building the bank's information systems | 3.761 | 368 | .000 | significant | 1.09357 | Average | .21409 | .1021 | .3260 |
| I participate in the design, building, and development of information systems in the bank | 6.338- | 368 | .000 | significant | 1.20736 | Average | -.39837 | -.5220 | -.2748 |
| The current organizational structure helps to quickly exchange information and make better use of it | -.943- | 368 | .346 | significant | 1.32538 | minimum | -.06504 | -.2007 | .0706 |
| The bank works to provide information protection requirements | -4.646 | 368 | .000 | significant | 1.03086 | Average | -.24932 | -.3548 | -.1438 |
| Sufficient budgets are allocated to build and develop information systems | -5.378 | 368 | .000 | significant | 1.49067 | Average | -.41734 | -.5699 | -.2647 |
| Legislation supports the information system and facilitates its work | -7.052 | 368 | .000 | significant | 1.12214 | Average | -.41192 | -.5268- | -.2971- |
| The bank uses modern computer equipment | -6.070 | 368 | .000 | significant | 1.28645 | Average | -.40650 | -.5382 | -.2748 |
| Computer equipment is constantly updated | -6.148 | 368 | .000 | significant | 1.29544 | Average | -.41463 | -.5472 | -.2820 |
| The bank has huge databases available to all employees | -8.153 | 368 | .000 | significant | 1.20034 | maximum | -.50949 | -.6324 | -.3866 |

| | | | | | | | | | |
|---|--------|-----|------|-------------|---------|---------|---------|--------|--------|
| A modern and effective communication network is available to serve the bank's information system. | -2.864 | 368 | .004 | significant | 1.18132 | Average | -.17615 | -.2971 | -.0552 |
| Employees are trained to use computers and deal with databases constantly | -3.176 | 368 | .002 | significant | 1.42616 | Average | -.23577 | -.3818 | -.0898 |
| The information system used has high efficiency, classification, retrieval, and updating of the data and information I need | -.631 | 368 | .529 | significant | 1.15564 | Average | -.03794 | -.1562 | .0804 |
| Regulatory requirements | -4.608 | 368 | .000 | significant | 1.10145 | Average | -.26423 | -.3770 | -.1515 |
| technological requirements | -5.618 | 368 | .000 | significant | 1.01473 | Average | -.29675 | -.4006 | -.1929 |
| Information Systems | -5.238 | 368 | .000 | significant | 1.02861 | Average | -.28049 | -.3858 | -.1752 |
| Source: The Author | | | | | | | | | |

The previous table shows that the value of the mean answers of the respondents about each phrase of the dimension of information systems axis is less than the mean of measurement by less than 0.5 in a statistically significant manner, as the level of significance of all phrases in the confidence interval is (sig.<0.05) and that the critical T-value corresponding to the degree of freedom values (59) that has a significant percentage of 0.05 has reached 1.973 which is less than the calculated T-values so the differences are significant. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted that the information systems requirements are not available at Syrian government banks.

Description of Enabling Knowledge Management Variable

Table (8) shows the descriptive statistics of enabling knowledge management variable phrases and the results of Student test of one sample were as follows:

Table (8) Describes enabling knowledge management variable One-Sample Test.

| One-Sample Test | t | df | Sig. | the differences | std. Deviation | Tendency | Mean Difference | 95% Confidence Interval of the difference | |
|---|---------|-----|------|-----------------|----------------|----------|-----------------|---|--------|
| | | | | | | | | Lower | Upper |
| Bank management clearly supports the implementation of knowledge management. | 10.867- | 368 | .000 | significant | .82394 | Average | .46612- | .5505- | .3818- |
| The bank's senior leadership recognizes the importance of knowledge management to the success of its business | 4.129- | 368 | .000 | significant | 1.15986 | Average | .24932- | .3681- | .1306- |

| | | | | | | | | | |
|---|---------|-----|------|-------------|---------|---------|---------|---------|--------|
| The management of the bank encourages teamwork | 13.006- | 368 | .000 | significant | .96865 | maximum | .6583- | .7550- | .5567- |
| Knowledge is an essential resource for the Bank | 2.851- | 368 | .000 | significant | 1.22345 | Average | .18157- | .3068- | .0563- |
| We share the knowledge and experience in the bank | 4.554- | 368 | .000 | significant | 1.17752 | Average | .27913- | .3997- | .1586- |
| A mistake is an opportunity for everyone to learn and to document the results | 4.129- | 368 | .000 | significant | 1.15986 | Average | .24932- | .3681- | .1306- |
| I gained knowledge from employees from the moment I was hired | 14.780- | 368 | .000 | significant | .88757 | minimum | .68293- | .7738- | .5921- |
| There is easy access to knowledge in the bank | 1.579- | 368 | .000 | significant | 1.02203 | minimum | .08401- | .1886- | .0206 |
| Employees are trained to practice knowledge-related tools | 7.786- | 368 | .000 | significant | 1.41070 | maximum | .57182- | .7162- | .4274- |
| Workers are motivated to acquire knowledge and enhance tacit knowledge | 3.433- | 368 | .000 | significant | .98570 | Average | .17615- | .2771- | .0752- |
| The Bank supports IT projects to facilitate the communication of employees | 14.222- | 368 | .000 | significant | 1.19327 | maximum | .88347- | 1.0056- | .7613- |
| The bank provides employees with IT support to search for and acquire new knowledge | 2.299- | 368 | .000 | significant | .88293 | Average | .10569- | .1961- | .0153- |
| The bank uses information technology for real-time learning | 6.986- | 368 | .000 | significant | 1.25931 | Average | .45799- | .5869- | .3291- |
| Infrastructures (,services networks, bases) are used to support IT | 4.906- | 368 | .000 | significant | 1.03993 | Average | .26558- | .3720- | .1591- |
| Enabling knowledge management | 7.999- | 368 | .000 | significant | .91067 | Average | .37921- | .4724- | .2860- |

Source: The author

The previous table shows that the value of the mean answers of the respondents about each phrase of enabling knowledge management axis is less than the mean of measurement in a statistically significant manner, where (sig.=0.00) and that the critical T-value corresponding to the degree of freedom values (59) that has a significant percentage of 0.05 has reached 1.671 which is less than the calculated T-values so the differences are significant. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted that enabling knowledge management is not available at Syrian government banks.

TESTING THE HYPOTHESES OF THE STUDY

First Sub-Hypothesis of the First Main Hypothesis Test

Measuring Correlation Strength Between the two Variables

Using Pearson's correlation test between the organizational requirements of information systems and enabling knowledge management, Table (9) shows that the level of the calculated significance is less than 0.5, and therefore we accept the hypothesis that there is a significant impact of both variables on the research sample, with a strong direct relation reaching (0.883) between them, thus the effect of organizational requirements has a very strong impact on enabling knowledge management in our research sample.

Table (9) Pearson correlation coefficient between organizational requirements and enabling knowledge management

| Pearson correlation | | Organizational requirements | Enabling knowledge management |
|---|---------------------|-----------------------------|-------------------------------|
| Organizational requirements | Pearson Correlation | 1 | .883** |
| | Sig. (2-tailed) | | .000 |
| | N | 369 | 369 |
| Enabling knowledge management | Pearson Correlation | .883** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 369 | 369 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |
| Source: Prepared by the author based on the outcomes of the "SPSS" 26 program | | | |

Finding the linear regression equation between the two variables: The correlation coefficient R must be calculated between both of the variables (R=0.883) as shown in Table (10), which indicates the strength of organizational requirements' impact on enabling knowledge management.

| Table (10) Correlation coefficient R Model Summary | | | | | | |
|---|-------------------|----------------|-------------------|----------------------------|----------|-------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | | |
| 1 | .883 ^a | .780 | .779 | .42802 | | |
| a. Predictors: (Constant), Organizational requirements | | | | | | |
| Source: Prepared by the Author based on the outcomes of the "SPSS" 26 program | | | | | | |
| Table (11) Variance analysis ANOVA | | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 237.952 | 1 | 237.952 | 1298.850 | .000 ^b |
| | Residual | 67.235 | 367 | .183 | | |
| | Total | 305.188 | 368 | | | |
| a. Dependent Variable: Enabling knowledge management | | | | | | |
| b. Predictors: (Constant), Organizational requirements | | | | | | |
| Source: Prepared by the author based on the outcomes of the "SPSS" 26 program | | | | | | |

Based on Table (11), it is clear that the test significance level is equal to (sig.= 0.00) which is less than the research significance level which came to (0.05), meaning that the regression line fits the data.

| Table (12) Regression line constant and slope Coefficients | | | | | | |
|--|-----------------------------|-----------------------------|------------|---------------------------|--------|------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .624 | .060 | | 10.439 | .000 |
| | Organizational requirements | .730 | .020 | .883 | 36.040 | .000 |

a. Dependent Variable: Enabling knowledge management

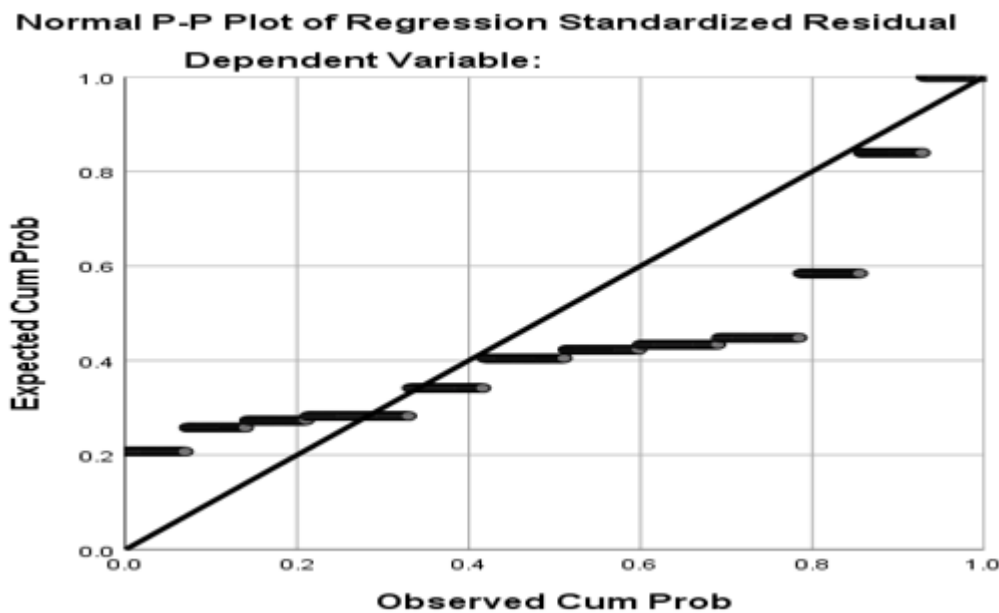
Source: Prepared by the author based on the outcomes of the “SPSS” 26 program

The general equation of a straight line: $Y = \alpha + \beta X$

From the previous Table (12) we find: $\alpha = 0.624$, $\beta = 0.730$

As well as (Sig.= 0.00) which is less significant than the null hypothesis, so the null hypothesis is rejected, thus the regression line fits the data, and the regression equation representing the correlation between organizational requirements for information systems and enabling knowledge management is: $Y=0.624+0.730 X$

Figure (3) The linear relationship between organizational requirements and enabling knowledge management,



Source: Prepared by the author based on the outcomes of the “SPSS” 26 program

Second Sub-Hypothesis of The First Main Hypothesis Test

Measuring Correlation Strength Between the two Variables

Using Pearson’s correlation test between the technological requirements of information systems and enabling knowledge management, Table (13) shows that the level of the calculated significance is less than 0.5, and therefore the hypothesis that there is a significant impact for

both variables on the research sample is accepted, with a strong direct relation reaching (0.956) between them, thus the effect of technological requirements has a very strong impact on enabling knowledge management in our research sample.

Table (13) Pearson correlation coefficient between technological requirements and enabling knowledge management

| Pearson correlation | | Technological requirements | Enabling knowledge management |
|---|---------------------|----------------------------|-------------------------------|
| Technological requirements | Pearson Correlation | 1 | .956** |
| | Sig. (2-tailed) | | .000 |
| | N | 369 | 369 |
| Enabling knowledge management | Pearson Correlation | .956** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 369 | 369 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |
| Source: Prepared by the author based on the outcomes of the "SPSS" 26 program | | | |

Finding the Linear Regression Equation Between the two Variables

The correlation coefficient R must be calculated between both of the variables (R=0.883) as shown in Table (14), which indicates the strength of technological requirements' impact on enabling knowledge management.

Table (14) Correlation coefficient R Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .956 ^a | .913 | .913 | .26891 |

a. Predictors: (Constant), technological requirements

Source: Prepared by the Author based on the outcomes of the "SPSS" 26 program

Table (15) Variance analysis ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|----------|-------------------|
| 1 | Regression | 278.649 | 1 | 278.649 | 3853.427 | .000 ^b |
| | Residual | 26.539 | 367 | .072 | | |
| | Total | 305.188 | 368 | | | |

a. Dependent Variable: Enabling knowledge management

b. Predictors: (Constant), technological requirements

Source: Prepared by the author based on the outcomes of the "SPSS" 26 program

Based on Table (15), it is clear that the test significance level is equal to (sig.= 0.00) which is less than the research significance level which came to (0.05), meaning that the regression line fits the data.

Table (16) Regression line constant and slope Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|----------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .303 | .040 | | 7.589 | .000 |
| | Technological requirements | .858 | .014 | .956 | 62.076 | .000 |

a. Dependent Variable: Enabling knowledge management

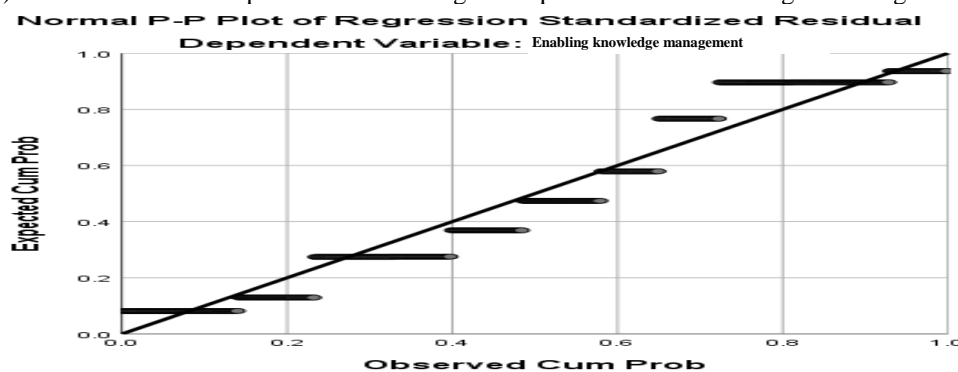
Source: Prepared by the author based on the outcomes of the "SPSS" 26 program

The general equation of a straight line: $Y = \alpha + \beta X$

From the previous Table (12) we find: $\alpha = 0.624$, $\beta = 0.730$

As well as (Sig.= 0.00) which is less significant than the null hypothesis, so the null hypothesis is rejected, thus the regression line fits the data, and the regression equation representing the correlation between organizational requirements for information systems and enabling knowledge management is: $Y=0.624+0.730 X$

Figure (4) The linear relationship between technological requirements and enabling knowledge management



Source: Prepared by the author based on the outcomes of the “SPSS” 26 program

The Second Main Hypothesis Test

There are Statically Significant Differences Between the Mean Sample Answers on the Information System Axis According to the Job Category and Job Experience

By conducting the mean differences test using the SPSS program, Table (17) shows significant differences in the mean sample answers on the information systems axis according to job category and job experience, where it shows a decrease in the mean answers of highly experienced workers in categories 2 and 3, as opposed to the first category which showed an increase in the mean answers when the experience increased, this may be attributed to the fact that these workers possess data about information systems in banks, which may be confidential or outside the technical competence of other workers, in addition to the fact that most of these workers may have reached higher management positions that give them access to more comprehensive data about information systems in these banks.

Table (17) Differences between the mean sample answers on the information systems axis by job category and experience

| Job category | Job experience | Mean | N | Std. Deviation |
|--------------|-------------------|--------|-----|----------------|
| First | Less than 5 years | 3.0462 | 46 | 1.17718 |
| | 5-10 | 2.6925 | 54 | .76615 |
| | 10-20 | 4.1522 | 13 | .42758 |
| | Total | 3.0044 | 113 | 1.02698 |
| Second | Less than 5 years | 3.1911 | 40 | 1.03496 |
| | 5-10 | 2.4423 | 78 | 1.04387 |
| | 10-20 | 2.4405 | 42 | .73636 |
| | Total | 2.6290 | 160 | 1.01795 |
| Third | Less than 5 years | 3.2170 | 41 | .86522 |

| | | | | |
|-------|-------------------|--------|-----|---------|
| | 5-10 | 2.0265 | 55 | .73894 |
| | Total | 2.5349 | 96 | .98792 |
| Total | Less than 5 years | 3.1470 | 127 | 1.03442 |
| | 5-10 | 2.3923 | 187 | .91851 |
| | 10-20 | 2.8451 | 55 | .99549 |
| | Total | 2.7195 | 369 | 1.02861 |

Source: The author

The Third Main Hypothesis Test

By conducting the mean differences test using the SPSS program, Table (18) shows significant differences in the mean sample answers on the axis of enabling knowledge management according to job category and job experience.

Table (18) Differences between the mean sample answers on the axis of enabling knowledge management by job category and experience

| Job category | Job experience | Mean | N | Std. Deviation |
|--------------|-------------------|--------|-----|----------------|
| First | Less than 5 years | 2.722 | 46 | 0.94644 |
| | 10-May | 2.5595 | 54 | 0.667 |
| | 20-Oct | 3.7033 | 13 | 0.03962 |
| | Total | 2.7573 | 113 | 0.83297 |
| Second | Less than 5 years | 2.9429 | 40 | 1.02126 |
| | 10-May | 2.4853 | 78 | 0.94047 |
| | 20-Oct | 2.3844 | 42 | 0.72928 |
| | Total | 2.5732 | 160 | 0.93214 |
| Third | Less than 5 years | 3.3153 | 41 | 0.69473 |
| | 10-May | 1.961 | 55 | 0.66437 |
| | Total | 2.5394 | 96 | 0.95269 |
| Total | Less than 5 years | 2.9831 | 127 | 0.92588 |
| | 10-May | 2.3526 | 187 | 0.82839 |
| | 20-Oct | 2.6961 | 55 | 0.85086 |
| | Total | 2.6208 | 369 | 0.91067 |

Source: The author

This results show a decrease in the mean answers of highly experienced workers in categories 2 and 3, as opposed to the first category which showed an increase in the mean answers of experienced workers, which may be due to the awareness of these groups of the need to spread knowledge and the fact that they share it, but this matter appears to be taking place within a limited scope in these groups according to the results.

CONCLUSION

The following conclusions could be drawn from our study; There is a significant effect of the availability of information systems requirements in banks on enabling knowledge management. This state that the impact of information systems on enabling knowledge management in the Syrian banking sector is significant; which apparently answers the research question that has been raised at the beginning of this study.

Also, there are significant differences between the mean responses of bank workers according to their job experience and category for both research variables, especially among the first category workers that have more than 10 years of experience. The lack of regulatory and technological requirements in banks to build good information systems that allow them to enable knowledge management. This study recommends the necessity of providing all the technological equipment needed to build a solid information system supported by an organizational structure and culture that secures the flow of information between all units in Syrian banks, which helps in enabling knowledge management that helps preserve the cumulative knowledge and experiences of the bank and preserve it as an intangible asset.

This study conducts a significant role in enabling knowledge management considering the banking sector and deals with, given the role it plays in driving the growth of the Syrian economy that has been damaged by the effects of the war; in addition to the importance of knowledge management in improving performance indicators in banks. Such implications would result in having workers with modern technologies improving their; which will have its effects on the overall sector and hence reflect positively on the community and financial institutions. In addition, the role of knowledge management in creating competitive advantages and supporting creative thinking in the Syrian banking sector. On the other hand, contributing to knowledge management throughout information systems is systematically and academically will be improved by the systematic effect of information use as a tool to spread the seeds necessary to have knowledge management in institutions to have increasingly a human capital that follow up with modern technologies.

The followings are the major limitations of the study: Because the present study was carried out at the Syrian banking sector, hence, generalizing the findings of this study to other professional contexts and organizations should be made with caution. In fact, the present study needs to be reproduced in other context to find whether the same or different results are obtained. In other words, different sector, and other contextual conditions might result in different results. In addition, the present study was conducted via questionnaire, scheduled interviews and deep analysis at the balance sheet might shed more light on the efficacy of KMS in organizations. The present study focused on (information system); Further studies and research might be fruitful to empower knowledge management by investigating information system indicators and their potential effects on knowledge management.

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Appendix (1) Questionnaire form

Ladies and gentlemen working in the bank

The Author has the honor to put between your hands a set of statements that express your opinions about some of the work scenarios you may come across while implementing the tasks you are supposed to do, and that you might agree or disagree with.

Please, read the questionnaire items carefully and then check the slots that represent your point of view keeping in mind that there is no correct answer and that the answers will only be used for this research purposes.

Job category:

| | | |
|--------------|---------------|--------------|
| First | Second | Third |
| | | |

Job Experience:

| | | | |
|--------------------------|-------------------|--------------------|---------------------------|
| Less than 5 years | 5–10 years | 10–20 years | More than 20 years |
| | | | |

First Axis: Information Systems

| Totally agree | Agree | Neutral | Disagree | Totally disagree | Phrases | Requirement | |
|---------------|-------|---------|----------|------------------|---|-----------------------------|----|
| | | | | | There is a strategic plan for information systems in line with the general strategy of the bank | Organizational requirements | 1 |
| | | | | | Information is seen as an essential element that supports the decision-making process in the bank | | 2 |
| | | | | | Senior management participates in planning, designing, and building the bank's information systems | | 3 |
| | | | | | I participate in the design, building, and development of information systems in the bank | | 4 |
| | | | | | The current organizational structure helps to quickly exchange information and make better use of it | | 5 |
| | | | | | The bank works to provide information protection requirements | | 6 |
| | | | | | Sufficient budgets are allocated to build and develop information systems | | 7 |
| | | | | | The legislation supports the information system and facilitates its work | | 8 |
| | | | | | The bank uses modern computer equipment | Technological requirements | 9 |
| | | | | | Computer equipment is constantly updated | | 10 |
| | | | | | The bank has a huge database available to all employees | | 11 |
| | | | | | A modern and effective communication network is available to server the information system in the bank | | 12 |
| | | | | | Employees are trained to use computers and deal with databases constantly | | 13 |
| | | | | | The information system used has high efficiency, classification, retrieval, and updating of the data and information I need | | 14 |

Second axis: Enabling knowledge management

| Totally agree | Agree | Neutral | Disagree | Totally disagree | Phrases | |
|---------------|-------|---------|----------|------------------|---|----|
| | | | | | Bank management clearly supports the implementation of knowledge management | 1 |
| | | | | | The bank's senior leadership recognizes the importance of knowledge management to the success of its business | 2 |
| | | | | | The management of the bank encourages teamwork | 3 |
| | | | | | Knowledge is an essential resource for the bank | 4 |
| | | | | | We share the knowledge and experience at the bank | 5 |
| | | | | | A mistake is an opportunity for everyone to learn and to document the results | 6 |
| | | | | | I gained knowledge from employees from the moment I was hired | 7 |
| | | | | | There is easy access to knowledge in the bank | 8 |
| | | | | | Employees are trained to practice knowledge related tools | 9 |
| | | | | | Workers are motivated to acquire knowledge and enhance tacit knowledge | 10 |
| | | | | | The bank supports IT projects to facilitate the communication of employees | 11 |
| | | | | | The bank provides employees with IT support to search for and acquire new knowledge | 12 |
| | | | | | The bank uses information technology for real-time learning | 13 |
| | | | | | Infrastructures (services, networks, bases) are used to support IT | 14 |

The Author appreciates your cooperation and sincerity answering the questionnaire and ensures the confidentiality of all the data presented.

With all due respect

Author: