



NEAR EAST UNIVERSITY  
GRADUATE SCHOOL OF SOCIAL SCIENCES  
INNOVATION & KNOWLEDGE MANAGEMENT  
MASTER'S PROGRAMME (MSC)  
MASTER'S THESIS

THE ROLE OF KNOWLEDGE MANAGEMENT  
PROCESSES IN HIGHER EDUCATION:  
A CASE OF DUHOK UNIVERSITY

ARAZ MOHAMMED FAREEQ

NICOSIA

2016



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PREPARED BY

ARAZ MOHAMMED FAREEQ

20145699

THESIS SUPERVISOR

ASSOC.PROF; DR. MUSTAFA SAGSAN

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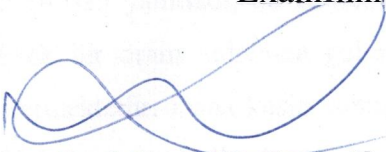
The Role of knowledge management processes in Higher education

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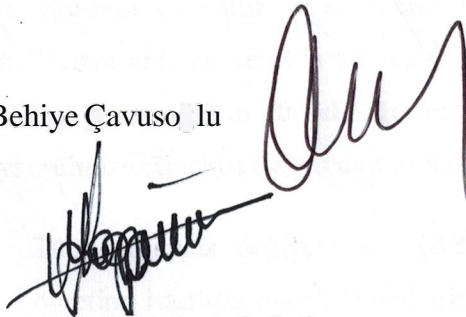


Assoc. Prof. Dr. Serife Eyüpoğlu

Near East University

Dean, Faculty of Economics &  
Administration Sciences

Dr. Behiye Çavuso lu



Near East University

Department of Economics

AsiOC. Prof. Dr. Mustafa Sa san



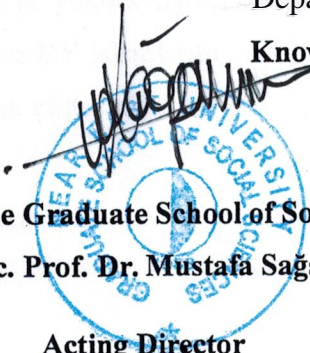
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## ÖZ

Bu ara tırma teorik ve pratik yakla ım olmak üzere iki bölümden olu maktadır. Teorik bölüm bilgi yönetimi (BY), BY süreçleri ve yüksek ö retim konularını ele almaktadır. Ara tırmanın amacı, BY nin rolünü ve süreçlerini Duhok Üniversitesi'nde ortaya çıkarmaktır. Ara tırmanın evreni, Duhok Üniversitesi Be eri Bilimler Bölümlerinde çalı an 984 ki iden olu maktadır. Pratik bölüm için, çalı manın konusunu netle tirmek amacıyla ara tırmacı Duhok Üniversitesi Bölüm Ba kanlarıyla ki isel mülakatlar gerçekle tirdi. Bu pratik çalı manın uygulamasıyla birlikte verilerin ara tırmada sunumunu da içerdi. Ara tırmacıya göre anket veri elde etmek için en uygun yoldu. Anket veri toplamak için bir yol olarak kullanıldı ve akademik ve yönetici çalı anlara da ıtıldı. ki yüz yetmi altı (276) anket da ıtıldı ve 245 çalı an yanıtladı, bu da %88.76'yı temsil etmektedir. Bu da cevap verenlerin yüksek bir oranı anlamına gelmekte ve bu konuya büyük bir ilgi ve i birli ini göstermektedir. Daha kesin sonuçlar almak için ara tırmacı veri analizi için SPSS V.22 programını kullandı.

Çalı ma a a ıdaki sonuçlara ula mı tır:

BY'nin e itimde uygulanması en önemli ve etkili modern yönetim yöntemlerinden biridir. Bunun anlamı, yenili i bir rekabet avantajı olarak e itim sistemine enjekte etmeyi te vik etmek için yüksek ö retimde yüksek ö retimdeki örtük bilgi ve açık bilgiyi optimize etmektir. Çalı manın sonuçları unları ortaya çıkardı:

- Tüm ba ımsız de i kenlerin (BY i lemleri), ba ımlı de i kenle (yüksek ö retim) istatistik olarak önemli olumlu ili kisi oldu una dair kanıt vardır.
- Sonuçlar BY i lemlerinin yüksek ö retimdeki önemli etkisinin varlı ı ile birlikte yüksek ö retimde BY i lemlerinin her bir bireysel i lemi için önemli bir etkiye sahip oldu unu göstermi tir.

**Anahter kelimeler:** Bilgi, Bilgi yönetimi, BY süreçleri, Yüksekö retim, yüksek ö retimde BY süreçleri

## ABSTRACT

This research consists of two sections: theoretical and practical approach. The theoretical section deals with the knowledge management (KM), the KM processes, and the higher education. The research objective is to reveal the role of KM processes in the Duhok University administration. The sample of research was 984, consisting of the academic and the administrative staff working at the humanity colleges at Duhok University.

For the practical section, the researcher conducted personal interviews with a number of Heads of Department at the University of Duhok in order to clarify the subject of the study. This included implementation of practical study as well as presenting data helpful in the research. The researcher found questionnaire to be the most appropriate instrument in order to obtain data. The questionnaire was used as a tool for collecting the data and was distributed to academic and administrative staff. Two hundred and seventy-six (276) questionnaires were distributed and 245 staff responded; which represents the 88.76%. This is considered as a high proportion of respondents and indicates the cooperation and interest in the subject. In order to get accurate results the researcher used statistical software (SPSS) V.22, for the analysis of the data. The study reaches the following main conclusions:

The application of KM processes in Higher Education is one of the most important and effective modern methods of management. It means optimising tacit knowledge and explicit knowledge in higher education for promoting innovation as a competitive advantage to inject into the education system. The results of the study revealed that:

- There is a strong evidence that all independent variables (KM processes) have a statistically significant positive relationship with depended variable (higher education).
- The results revealed the existence of a significant effect of KM processes in higher education, as well as having a significant effect on each individual process of KM processes in higher education.

Keywords: knowledge, knowledge management, knowledge management processes, Higher education, knowledge management processes in Higher education



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## INTRODUCTION

With an upsurge of interest in knowledge in the recent years, economists and policy-makers started writing about certain changes in the economy and in the society. "They have described a new, knowledge-driven economy, and identified the need for all of us to recognize that we were now living in the knowledge age" (Jones & Sallis, 2002).

"The value is now created by "productivity" and "innovation," both applications of knowledge to work" (Drucker, 1993). Knowledge management has been proposed as an important strategy. Before discussing the reasons why knowledge management is still not easy to manage, it would be helpful to know that the development of knowledge management and knowledge management processes, and contributions from some of the leading thinkers interested in knowledge as a source of competitive advantage. Knowledge of running a business has a long history in various disciplines and knowledge management has become a hot topic since the 1990s. Its various components were influential in making intellectual capital and knowledge become stronger. Accumulated wisdom has been used to increase the speed of response and innovation. It has also been known that administration defined the explicit knowledge and tacit knowledge which depend on the basis of knowledge as a process of creativity, organisation, dissemination, and discovery of knowledge.

Knowledge management processes are a one of the modern management systems to assist universities in order to collect knowledge, to choose the best and to apply the knowledge to address the problems they face. Higher education, by the nature of its work, is one of the most important organisations, having tangible and intangible assets, which are suited to make use of this topic, It could be said that Higher education has the infrastructure of knowledge with the presence of human and technical elements, theoretical, scientific disciplines, research centres, sources of information, systems and development of strong points which harnessed at the same time to improve the education curriculum.

## CHAPTER ONE

### THE GENERAL FRAMEWORK OF THE RESEARCH

#### 1.1. Research Problem

It is well known that the university has three major functions: teaching, research, and community service. Most universities only confine themselves to the teaching field without research and community service.

The real wealth in today's world is humans, but the problem is how to turn humans from "Tacit knowledge" to "Explicit knowledge". In general, we need to rethink our education, particularly in the philosophies and policies, through management, strategies, implementation, development and follow-ups. The current higher education does not only need to modify and develop, but also needs to change completely in relation to philosophy, policies, structures, organisations, management, and methodologies. Educational programs and curricula are still available which are unsuitable for the developments and the needs of society; also, most of the teachers need to develop teaching competencies and used the methods of teaching are not effective to encourage college students to engage in critical thinking dialogue. Moreover, some teachers lack capabilities to reach appropriate information and appropriate language in a manner suitable for students. The Higher Education is the most important organisation based on its production of knowledge and its investment in terms of knowledge. In the light of the absence of scientific studies to reveal the extent of the knowledge processes at Duhok University, the researcher identifies the problem of study in the main question:

What is the role of knowledge management processes in the Duhok University administration?

This main question is leading to several sub-questions as follows:

- What is the description of KM according to both academic and administrative staff of Humanities College in Duhok University?



- What is the degree of Duhok University administration practice of KM processes (knowledge identification, knowledge auditing, knowledge creation, knowledge sharing, knowledge storage, and knowledge application)?
- What is the nature of the relationship and effect among KM processes (knowledge identification, knowledge auditing, knowledge creation, knowledge sharing, knowledge storage, and knowledge application) and Higher Education in Duhok University?

## **1.2. The Importance of Research**

KM processes have become very important issues in higher education. At the Duhok University it is not sufficient what is done, and more importantly is to convert KM and KM processes to implementation. The University may have blocked the gap taking place between knowledge and implementation. It is known there are many (Universities) gaps between what they know and what is implemented. KM and KM processes are becoming the main source of excellence, development, and creativity in Higher education. It has to be decided who owns, will have the power, control, and progress.

According to Jones & Sallis, 2002, Knowledge is power. However, knowledge is of the utmost importance to achieve a competitive advantage this requires department to find the knowledge to provide the level of specific activities in the form of discipline and makes knowledge a daily program for all sections. This concept of KM processes does not have enough concern by researchers, the interested and practitioners, especially in Higher Education institutions. KM processes in higher education help to confront changes required in the present, and rapid changes occurring in the world have made knowledge management a necessity for all society organisations, especially educational organisations. Universities, managing the largest field, can be invested in the knowledge age, by their assets of the human element and education.



### 1.3. Research Objectives

In light of the research problem and the importance of the study, the main objective of the study is to describe the KM and to analyse the KM processes at Duhok University administration. Through the practical side and based on the theoretical framework within the scope of the questionnaire, the role of KM processes should be activated and participants should be encouraged to adopt work practices referring to justifications of the KM processes. The researcher identifies the main objectives of the study as:

1. Identifying the description of KM according to both the academic and administrative staffs of Humanities College in Duhok University.
2. Identifying the degree of Duhok University administration practice of KM processes (knowledge Identification, knowledge auditing, knowledge creation, knowledge sharing, Knowledge storage and knowledge application).
3. Identifying the nature of the relationship and effect among KM processes (knowledge Identification, knowledge auditing, knowledge creation, knowledge sharing, knowledge storage and knowledge application) and Higher Education in Duhok University.

#### 1.4. Research Hypothesis

1. There is a correlation between knowledge management processes and higher education. (Ho)

This main hypothesis are leading to several sub-hypothesis as follows:

- There is a correlation between knowledge identification and higher education. (H1a)
- There is a correlation between knowledge auditing and higher education. (H1b)
- There is a correlation between knowledge creation and higher education. (H1c)
- There is a correlation between knowledge sharing and higher education. (H1d)
- There is a correlation between knowledge storage and higher education. (H1e)
- There is a correlation between knowledge application and higher education. (H1f)

2. There is an impact of knowledge management processes on higher education. (Hol)

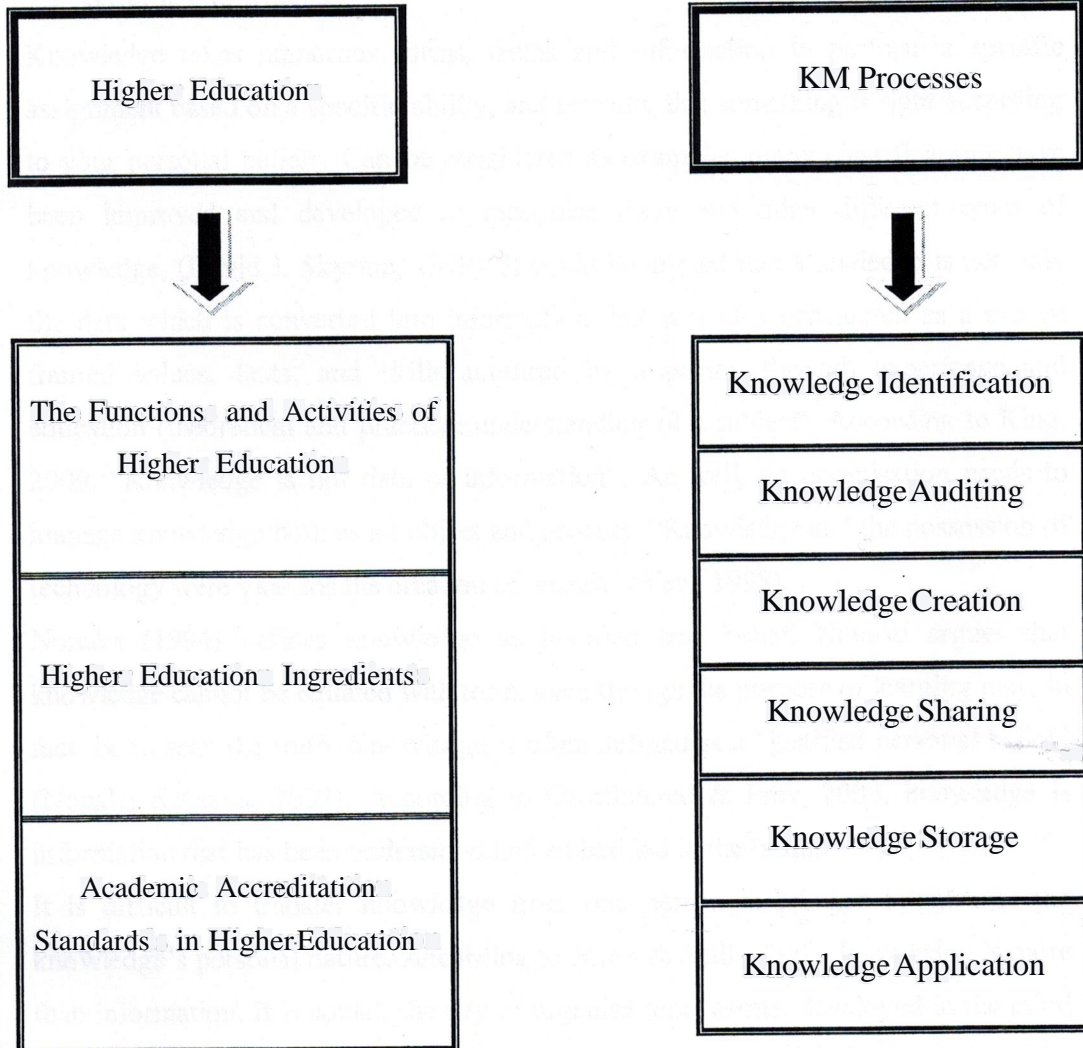
This main hypothesis are leading to several sub-hypothesis as follows:

- There is an impact of knowledge identification on higher education. (H2a)
- There is an impact of knowledge auditing on higher education. (H2b)
- There is an impact of knowledge creation on higher education. (H2c)
- There is an impact of knowledge sharing on higher education. (H2d)
- There is an impact of knowledge storage on higher education. (H2e)
- There is an impact of knowledge application on higher education. (H2f)

## Research Model

Dependent Variables

Independent Variable





## CHAPTER TWO

### LITERATURE OF KNOWLEDGE MANAGEMENT

#### 2.1. What is Knowledge?

Knowledge takes numerous forms, truths and information to perform a specific assignment based on a specific ability, and learning that something is right according to your personal beliefs. Can be considered as examples many classifications have been improved and developed to recognise these and other different types of knowledge, (David J. Skyrme, 1999). It could be argued that knowledge is not only the data which is converted into information, but it is also considered as a mix of framed values, facts, and skills acquired by a person through experience and education (theoretical and practical understanding of a subject). According to King, 2009, "Knowledge is not data or information". As well, an organisation needs to manage knowledge both as an object and process. "Knowledge and the possession of technology were vital for the creation of wealth" (Yew, 1998).

Nonaka (1994) defines knowledge as justified true belief. Nonaka argues that knowledge cannot be equated with truth, even though the purpose of learning may, in fact, be to seek the truth. Knowledge is often defined as a "justified personal belief" (Nonaka & Kazuo, 2007). According to Osterloh and Frey, 2000, knowledge is information that has been understood and embedded in the brain.

It is difficult to transfer knowledge from one person to another because of the knowledge's personal nature. According to Jones & Sallis, 2002, knowledge is more than information. It is social; the key of organisational assets; developed in the mind of a knowing subject; active understanding; relies on the individual perspective point of view; a key organisational asset; the spurs to activity; both explicit and tacit. There are many classifications to specify various kinds of knowledge, the most fundamental distinction is between "tacit" and "explicit" knowledge; so knowledge is a progressing language. According to Covey, 2004, "Knowledge is the quickest and safest path to success in any area of life".

## 2.2. Hierarchy of Knowledge

Knowledge is the most important aspect of human history. If there was no knowledge, we would not have the highest standard of living that we enjoy. The science of humankind was able to improve knowledge over centuries, and therefore improve technology. Organisational structure plays a key role in KM. There may be consequences of elements of KM, including that it might lead to unintended consequences and become an obstacle to cooperation and sharing of knowledge within the organisation. One of the main challenges within the organisational structure is encouraging individual behaviour within the structure of the organisational units.

There is also withholding knowledge of the rest of the units in addition to the hierarchical organisational structure in Figure (1). There is an organisational structure entailed in the cancellation of many special bureaucratic costs. This achieves a greater degree of flexibility enabling those charged with the implementation of the strategies and the special KM plans.

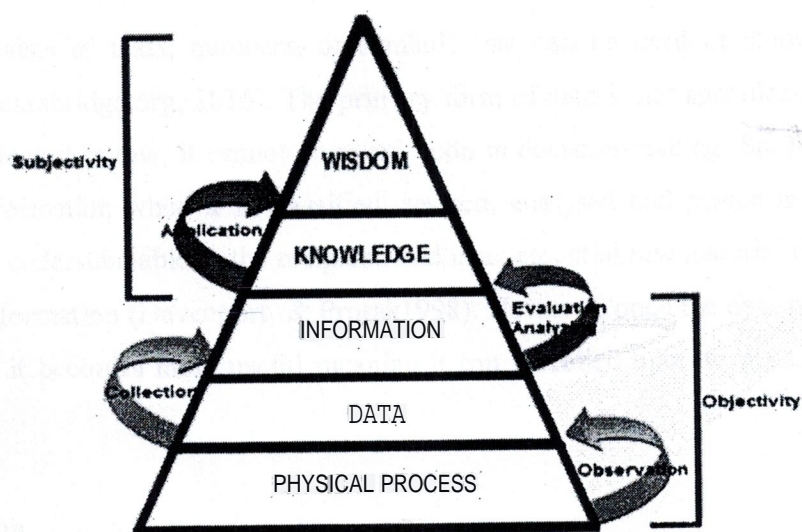


Figure 1: Hierarchy of Knowledge

Prepared by the researcher based on previous studies



### 2.2.1. Physical Process

The human capacity for vision and symbolic thinking consists of discovering the secrets of the things in nature: thus it enables us access to the two laws which enable them to interpret phenomena, control them and use them in his favour. Thinking is a source of science and the science is a source used to modify human behaviour that differed from previous human behaviour. Whenever increased knowledge is changed, human's view of the varied circumstances, benefit from the common human who has seen pieces of rock as just the things cannot but help, but the geological record of the world considers past ages and discovers the characteristics of those ages. With the physical realisation of continuous human presence which is of great psychological importance through thinking, the people know humanity and they are able to maintain it and its presence by taking advantage of the experiences of previous generations and to adapt to the environment with the development of methods to deal with these changes and this knowledge.

### 2.2.2. Data

Data usually consists of texts, numbers, or symbols that can be used or stored, (<http://dictionary.cambridge.org>, 2016). The primary form of data is not specifically useful because, since it is raw, it cannot be relied upon in decision-making. So, if data becomes information when it is classified, revised, analysed and placed in a clear framework, understandable to the recipient, and is an essential raw material for the creation of information (Davenport & Prusak 1998). However, once the data is a processed search it becomes more useful meaning it can be relied upon to make a decision.

### 2.2.3. Information

Information, in fact, is the result of applying data, grants the status of credibility and serves a specific purpose. The information is developed and promoted to the status of knowledge when used for the purpose of comparison, assessment of prior and specific results, for the purpose of communication, or when it participates in a dialogue and discussion. Information is the data showing the framework and content of a clear and specific item in order to use the possibility to make a decision. Organisations are not dormant, but constant change. Any change within the



organisation is called an event. The events within the organisation must be documented and its aims referred to it when we need it to appear again. The event is documented by letters, numbers, reference or a mix of them. According to Bernard & Tichkiewitch, 2008, some authors differentiate the information in two classes: formal and informal:

1. **Formal Information** is an element of information that provides a specific context and measure.
2. **Informal Information:** is considered by the authors as to encompassing unstructured information.

#### 2.2.4. Knowledge

Knowledge consists of truths, beliefs, concepts, new discoveries, judgments, expectations, methodologies, and know-how, the reasons for success and failure, experiences, and procedures that are considered correct and true. Knowledge is a result of information and data, too. According to Davenport & Prusak, 1998, the knowledge is embedded in routines and practices that the organisation transforms into valuable products and services. Some people have the ability to think creatively and to analyse and interpret information based on what is available from the information. If the individual's available capabilities and core competencies have a bearing on how to deal with the information, then, we can say that one of the most important pieces of knowledge is missing. Therefore, the result of the knowledge is a mix of the background of information, experience, perceptions and the ability to govern and broker information leads to the knowledge gained among many, rather than guessing the actual practice. According to Sveiby, 1997, "Knowledge is a capacity to act".

## **THE TWO MAJOR TYPES OF KNOWLEDGE: TACIT KNOWLEDGE AND EXPLICIT KNOWLEDGE**

### **2.2.4.1. Tacit Knowledge**

"We can know more than we can tell" (Polanyi, 1966). Tacit knowledge is highly individual and difficult to express; subjective insights, intuitions, and hunches fall into this category of knowledge (Nonaka, Toyama, and Konno 2008). Tacit knowledge has two dimensions: technical and cognitive. Technical dimension of tacit knowledge involves the knowledge that an individual develops and captures in his/her mind in relation with handicraft, (Dictionary of Philosophy, 1996). The cognitive dimension consists of beliefs, ideas, opinions, mental models and can be gained by observing employees' behaviour. According to O'Sullivan, 2008, tacit knowledge is a skill learned from personal experience by doing. In other words, tacit knowledge has to do with the practical experience of an employee instead of information that can be garnered from books or manuals. Tacit knowledge is difficult to articulate. On the other hand, explicit knowledge represents the content that has been captured in the tangible form such as words, audio recordings, or images. According to Dalkir & Liebowits, 2005, "In fact, 'tacitness' is a property of the knower: what is clearly explained by one person may be very difficult to externalize by another".

### **2.2.4.2. Explicit Knowledge**

Explicit knowledge consists of knowledge which can be expressed through the use of words, numbers, maps, journals, books, recordings, diagrams, websites, pictures and other symbols. This knowledge can be transferred through interaction between people, and between people and machines. Besides, though most explicit knowledge is technical data or academic information is expressed in formal language, it can be codified and captured in the knowledge stores of organizations. Therefore, we can structure and codify this type of knowledge. So, explicit knowledge is usually contained within tangible or concrete media; however, it should be noted that this is a rather oversimplified dichotomy. Explicit knowledge can be expressed in formal, systematic language, shared in the form of data, scientific formulae, specifications, and manuals. It can also be processed, transmitted and is relatively easy to store.



### **2.2.5. Wisdom**

It is extrapolated by understanding, it has multiple answers or the highest understanding a human can have after the absorption of knowledge is complete. According to Einstein, 1979, once said "Wisdom is not a product of schooling, but of the lifelong attempt to acquire it". Intelligence alone doesn't make a person wisdom if one lacks a good base of knowledge and experience. In other words, the transition from knowledge to wisdom is not easily crossed. Wisdom does not represent large numbers of files, documents or data, but it is based on the distillation of information, knowledge and intelligence to produce knowledge (Austin, 2015).

### **2.3. Knowledge Management**

KM is one of the most important and the hottest topics at the present time; it focuses on the efforts of multiple and different interests, in particular, the field of business management, technology, and education. In addition, a traditional economy was based on assumptions that factors such as land, labor, and capital are the basic factors of production that create wealth and make money, but now, many of successful companies and organizations depend on the KM. It is an especially invaluable asset and part of their intellectual capital. Also, KM is a scientific human knowledge linked to a new system, culture and a particular environment to provide the best services. According to Nonaka & Takeuchi, 1995, "suggested that the conversion of internal tacit knowledge into explicit codified knowledge is the basis of knowledge management and provides the opportunity for sharing knowledge".

KM is the activities and processes that help organizations gain knowledge through identification, sharing, creation, auditing, storage, application and to convert information and experience owned by an organization. It is employed in different activities of management to make decisions. Today, organizations compete not only on the basis of product, service, and operational superiority, but also through the enhanced management of their corporate memory and intellectual assets of knowledge (Geisler & Wickramasinghe, 2009). According to Quintas & Jones, 1997, "Knowledge management is the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities".



### **2.3.1. Importance of Knowledge Management**

The importance and discipline of KM have encouraged the higher education to create and develop education programs for different academic standards of education. Many KM courses are designed to educate and train a new generation of professionals qualified to assume different roles and responsibilities for the activities of KM in organizations at various levels of knowledge. KM is a multidisciplinary field that overlaps with a number of disciplines such as science, library, information, technology, business, and management. Higher education establishments offer courses or modules KM as a part of their academic program. At the same time, communication and cognitive science validation of KM are included in the educational curriculum. Given that the critical importance of knowledge to the modern organization and the fundamental role of IT initiatives and the knowledge-leveraging of the organization further research KMs, the user acceptance factors seem to be a priority of critical research.

Most of the firms in the sample seem to be cognizant of the importance of knowledge as a valuable resource affecting their capabilities to remain competitive, (Jennex, 2007). However, we can say the importance of KM is that:

- (a) It has the opportunity to reduce costs and raise efforts.
- (b) Provides a systematic process for coordinating the activities of the organisation.
- (c) It has an effective tool for organisations to invest intellectual capital.
- (d) It is a motivational tool to encourage creative and human resource capacity.
- (e) It provides an opportunity for lasting competitive advantage for the organisation.
- (f) It helps maximise the value of knowledge.

### 2.3.2. Knowledge Management Objectives

KM objectives determine the organisational expectations of individuals and teams. They often relate directly to the organisation's KM strategy. The main objective of KM is to constantly provide knowledge of the organization and translate into practical actions to best serve the objectives of the organization achieve efficiency and effectiveness of knowledge through the efforts of planning and organizing. The best knowledge is the essence of wisdom and creativity to provide potential, competitiveness and distinction; KM works to provide the capabilities, potential, and width via information technology.

According to Garfield, 2010 and Ismail, 2003 KM objectives are as follows:

1. Enabling better and faster decision-making.
2. Making it easy to find relevant information and resources.
3. Reusing ideas, documents and expertise.
4. Avoiding redundant effort.
5. Avoiding making the same mistakes twice.
6. Taking advantage of existing experience.
7. Promoting a standard, repeatable processes and procedures.
8. Making the organisation's best problem-solving experiences reusable.
9. Attracting intellectual capital to find solutions to the problems facing the organisation.
10. Creating a regulatory environment that encourages everyone in the organisation to share knowledge.
11. Ensuring the effectiveness of the organisation from transforming tacit knowledge into explicit knowledge.
12. Maximizing returns from the intellectual property through the use of inventions and knowledge in their possession and trading innovations.
13. The transforming of the institutions of the traditional economy in the new global economy, knowledge economy and working on the collection of smart ideas from the field, and contributing to the dissemination of best practices in the organisation.



### 2.3.3. Knowledge Management Processes

In the twenty-first century, the role of KM in education became critical for the development of knowledge-based societies and development the KM process. KM processes are at the heart of KM. Some practical aspects of KM processes can now be discussed. Researchers and scientists have different ideas of determining the number of KM processes. Most concepts of KM processes consist of a setup of the processes, leading to working consecutively in an integrated manner with, each process depending on the process that preceded it, and supporting the process flowing. The KM processes are the main source of data organization and information upon which to make decisions, solve problems, and how to invest those processes in the best way. However, in recent years, KM has become an important success factor in business. Information technology and KM process are typically created from organizational memory that integrates different types of individual and organizational knowledge. "The knowledge of good KM system is never finished because over time the environment changes and the knowledge must be updated to reflect the changes" (Turban & Wetherbe, 2006). Generally, knowledge processes are associated with a range of different ways of making knowledge.

According to some authors, and researchers knowledge management processes (life cycle) are shown in Figure (2), (3) and (4):



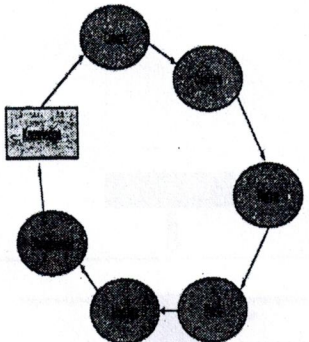
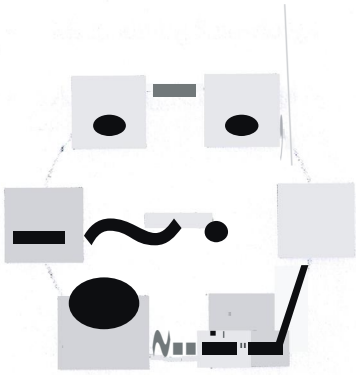
Turban, (2006)	Marquardt, (2002)
<ul style="list-style-type: none"> <li>• Create knowledge.</li> <li>• Capture knowledge.</li> <li>• Refine knowledge.</li> <li>• Store knowledge.</li> <li>• Manage knowledge.</li> <li>• Disseminate knowledge.</li> </ul>  <p><b>SOURCE:</b> Turban&amp; Wetherbe, (2007). Information technology for management: transforming organizations in the digital economy. John Wiley &amp; Sons, Inc.372.</p>	<ul style="list-style-type: none"> <li>• Acquisition</li> <li>• Creation</li> <li>• Storage</li> <li>• Analysis and Data Mining</li> <li>• Transfer and Dissemination</li> <li>• Application and Validation</li> </ul>  <p><b>SOURCE:</b> Marquardt, M. (2002). Building the learning organization: Achieving strategic advantage through a commitment to learning, P: 30.</p>

Figure (2)

Figure (3)

ICICOR, (2011)	Rollett, (2003)
<ul style="list-style-type: none"> <li>• Knowledge identification</li> <li>• Knowledge creation</li> <li>• Knowledge storage</li> <li>• Knowledge sharing</li> <li>• Knowledge utilization</li> </ul> <div data-bbox="351 1024 723 1577"> <p>The diagram illustrates a knowledge management process for improving cardiovascular patient health. It features a central cycle of five activities: 'Identify research problem', 'Knowledge creation', 'Knowledge storage', 'Knowledge sharing', and 'Knowledge utilization'. These activities are interconnected by arrows, forming a continuous loop. The central goal of the process is 'TO IMPROVE THE HEALTH OF CARDIOVASCULAR PATIENTS'. The process is framed by 'Mi#IHE' at the top and 'MEiii@E' at the bottom.</p> </div> <p><b>SOURCE:</b>  <a href="http://biomed.uninet.edu/2011/n2/velasco.html">http://biomed.uninet.edu/2011/n2/velasco.html</a></p>	<ul style="list-style-type: none"> <li>• KnowledgePlanning</li> <li>• Creatingknowledge</li> <li>• IntegratingKnowledge</li> <li>• OrganizingKnowledge</li> <li>• TransferringKnowledge</li> <li>• MaintainingKnowledge</li> <li>• AssessingKnowledge</li> </ul> <div data-bbox="793 1183 1224 1470"> <p>The diagram shows a central 'Using' process surrounded by eight other processes: Planning, Assessing, Maintaining, Transferring, Organizing, Integrating, Creating, and Planning. These processes are arranged in a circular pattern around the central 'Using' process.</p> </div> <p><b>SOURCE:</b> Rollett.H, (2003),  <b>KNOWLEDGEMANAGEMENT: PROCESSES AND TECHNOLOGIES,</b>  p: 12.</p>



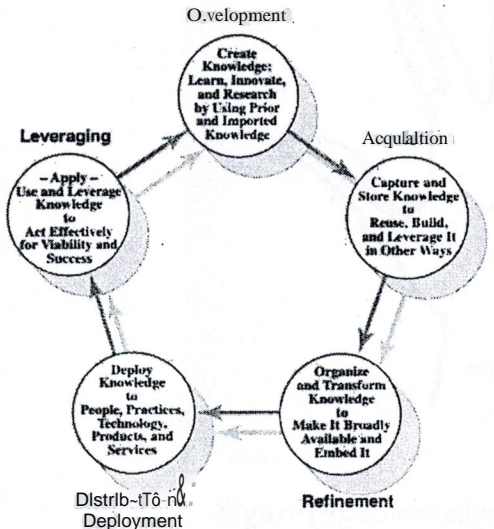
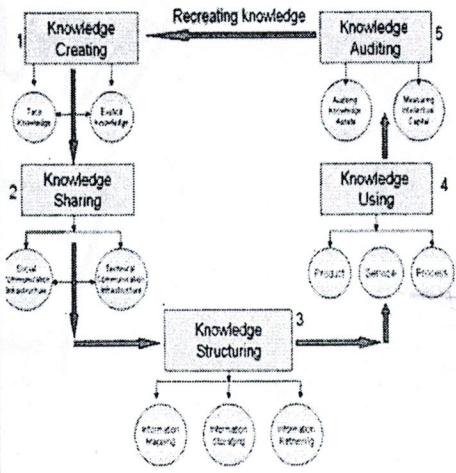
Wiig, (1999)	Sagsan, (2007)
<ul style="list-style-type: none"> <li>• Knowledge Development .</li> <li>• Knowledge Acquisition .</li> <li>• Knowledge Refinement .</li> <li>• Knowledge Distribution and Deployment.</li> <li>• Knowledge Leveraging.</li> </ul> 	<ul style="list-style-type: none"> <li>• Knowledge creating</li> <li>• Knowledge sharing</li> <li>• Knowledge structuring</li> <li>• Knowledge using</li> <li>• Knowledge auditing</li> </ul> 
<p><b>SOURCE:</b> Wiig, (2004), People-Focused Knowledge Management, P: 92</p>	<p><b>SOURCE:</b> Sagsan, (2007), Knowledge Management from Practice to Discipline: A Field Study TODA E's Review of Public Administration, Volume 1 No 4 Dec. 2007, P: 130.</p>

Figure (4)



The researcher of the study has limited the processes for the research. The Figure (5) shows the ~ processes. The researcher uses a hand of KM processes; as each type of knowledge has its own meaning and notion, and they are interrelated to each other, likewise, every finger has its own importance and power. For instance, when the knowledge is used with more care and consciously one after another the application of knowledge works perfectly and effectively when it works together because every finger has its own importance and special power. However, each type of knowledge is not guaranteed of the success of KM processes, but the knowledge application is an assurance of success. The KM processes are as follows:

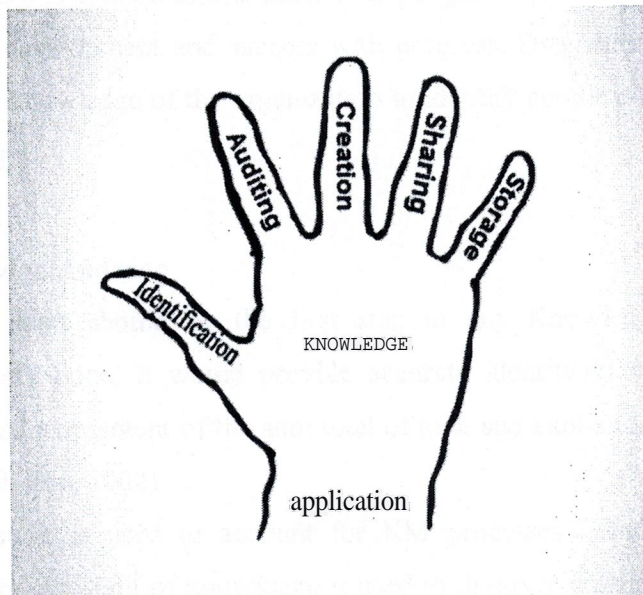


Figure (5). Knowledge management processes

Prepared by the researcher based on previous studies

#### 2.3.3.1. Knowledge Identification

Knowledge identification process is a key to any program for KM. This process is one of the most important processes of KM and it starts the definition of knowledge. As well as the searching for the whereabouts of that knowledge. It is found in the minds of peoples, or in the systems or the processes. Therefore the most important challenges faced by business organizations are an identification process because the success of any education management project depends on the accuracy of identification. In addition, achieving the comparison between finding current

knowledge in an organization and funding required knowledge is critical. This difference represents the volume of the effort made that the organization needs to get to the desired innovation. Knowledge identification refers to the process of proactively identifying internal organizational knowledge. Knowledge identification is the oldest term used in the literature to define knowledge in an abstract and non-sweeping way; it seems to be extremely difficult. Knowledge easily becomes everything and nothing. The identification process contributes to identifying the appropriate knowledge which addresses many of the existing problems through the use of means and the discovery of the research mechanisms to get the accurately identified knowledge (Alvesson, 1993). The importance of diagnosis means that the knowledge process is created on the basis of the organization wealth and the active management of development and success with progress. Diagnostic process results are a discovered knowledge of the organization to identify people with like positions having knowledge.

#### **2.3.3.2. Knowledge Auditing**

"A knowledge audit should be the first step in any Knowledge Management initiative. Properly done, it would provide accurate identification, quantification, measurement, and assessment of the sum total of tacit and explicit knowledge in the organization" (Hylton, 2002).

A knowledge audit is used to account for KM processes (identification, share, creation, storage). An audit of knowledge is used to discover practices and activities of knowledge evaluation of a person, organization, system, process, project or product. The audits are conducted to determine the validity and reliability of information and also to provide an assessment of the internal control system. The purpose of an audit is to make an evaluation based on work done on a test basis to express an opinion on the organization/individual system, etc. According to Sasan, 2007, "Knowledge audit is a systematic and scientific examination and evaluation of the explicit and tacit knowledge resources used in products, services, and processes in the organization". Therefore, it helps the organization clearly identify the true knowledge and to support the overall goals of the organization and individual activities. In addition, it provides information on the extent to which knowledge is being managed, and indicates where improvements are required. Drucker, 1959, reported the "We cannot say any longer: 'Knowledge is the truth' or 'All power



corrupts'. We must accept new propositions: Knowledge is power, and power is responsibility." Hence, knowledge audit is a systematic examination and evaluation of the truthfulness of organizational knowledge; which analyses knowledge is exploited when needed.

### **2.3.3.3. Knowledge Creation**

Knowledge creation means the innovation of knowledge with the participation of work teams and supporting groups to create the intelligence capital of a new knowledge on issues and practices. According to Rollett, 2003, there are basically two ways for an organization to increase its overall stock of knowledge: by creating new knowledge and by acquiring already existing knowledge. This is a process which assists with the definition of the problems and find solutions to them in a continuous and innovative way. This reinforces the need to understand that knowledge and innovation in two-way double process:

Knowledge is the source of innovation and innovation as a result of the source of new knowledge .Knowledge creation is accomplished by the collection of information and integrates one with the other via the link of the expertise and knowledge or through education, research, development and creative thinking training.

Knowledge creation refers to the processes which are building, capturing, buying, discovering, absorbing and acquiring. All these refer to the knowledge creation and how to get new knowledge in different ways, These ways are:

- Capturing, which refers to getting knowledge in the minds of the creators. Innovation refers to creating new knowledge.
- Buying, which refers to obtaining knowledge through direct purchase or through the use of employment contracts.
- Absorbing refers to the ability to understand and comprehend explicit knowledge.
- Discovery. Which also refers to determining available knowledge.
- Acquiring from resources which are external to an organisation and can be hired or purchased (Hussein, 2011).

The extent of the organization's ability to create knowledge by rearranging and mixing explicit knowledge and tacit knowledge through interactions among

individuals to form new facts (Michael, 2002) is important. New knowledge is generated through a number of different processes ranging from innovation to painstaking and elaborate research. It can also come through the ability to see new connections and combine it with previously known knowledge elements through complex inductive reasoning. According to Turban, & Wetherbe, 2006, Knowledge is created as people determine new ways of doing things or develop know-how. In addition, Nonaka & Takeuchi, 1995, sides to knowledge creation, which means adding knowledge or correcting the current knowledge, knowledge creation can occur through individual and collective learning within an organization.

The models used in the generation of knowledge process in the SECI model (SECI stands for four modes of knowledge conversion: Socialization, Externalization, Combination, and Internalization) where knowledge is generated and re-found in the organization shows in Figure (6). In other words, knowledge is about beliefs, commitments, and actions. The fundamental model of the theory of organizational knowledge creation is the SECI model and I believe the SECI model, developed by Nonaka and Takeuchi, has become the most recognized and accepted model of knowledge transfer worldwide. It is precise, clear and simple to understand. The SECI model can be easily appreciated as a KM process. It comprises the harnessing of existing, and the creating new knowledge. Through the SECI process, it makes lots of sense and can be an incentive to share knowledge among those concerned. It can easily be implemented provided the leader demonstrates an open door policy and continuing dialogue at will.

They proposed four ways that knowledge types can be combined and converted, showing how knowledge is shared and created in the organization. The model is based on the two types of knowledge outlined (tacit knowledge and explicit knowledge). Moving through the spiral, the interaction between tacit and explicit knowledge. An organization creates knowledge by means of the interactions and the conversion between explicit knowledge and tacit knowledge (Nonaka, 1990, 1991 and 1994, and Nonaka & Takeuchi, 1995.)



#### **2.3.3.3.1. The Four Models of Knowledge Conversion (SECI Model)**

The interaction between the two types of knowledge is defined as knowledge conversion. In the conversion process, tacit and explicit knowledge expands in both quality and quantity (Nonaka, 1990, 1991 and 1994, and Nonaka & Takeuchi, 1995.) In other words, knowledge is about beliefs, commitments, and actions. The fundamental model of the theory of organisational knowledge creation is the SECI model. This model, developed by Nonaka and Takeuchi, has become the most recognised and accepted model of knowledge transfer all over the world. It is precise, clear and simple to understand. This is shown in Figure (6). The movement through the spiral, clearly defines the interaction between tacit and explicit knowledge. An organisation creates knowledge by means of the interactions between explicit knowledge and tacit knowledge. The four models of knowledge conversion are in the following sections:

#### **2.3.3.3.2. Socialisation**

Tacit to tacit knowledge: relies on the participation of knowledge within a particular community in the organisation, but remains within this knowledge society as only tacit knowledge. Knowledge is passed on through practice, guidance, imitation, observation, sharing and creating tacit knowledge through direct experience. It can be acquired only through shared experience, such as spending time together or living in the same environment. At this stage, individual tacit knowledge is shared through shared experiences in day-to-day social interaction to create new tacit knowledge. (Nonaka, 1995), distinguished technical tacit knowledge (concrete know-how and skills) from cognitive tacit knowledge (mental models of the world). Sometimes, one individual shares tacit knowledge directly with another. For example, a player on the pitch will learn tacit skills through observation, imitation and practice. They become part of an owned tacit knowledge base; put another way, it will also be 'socialised' into the art.

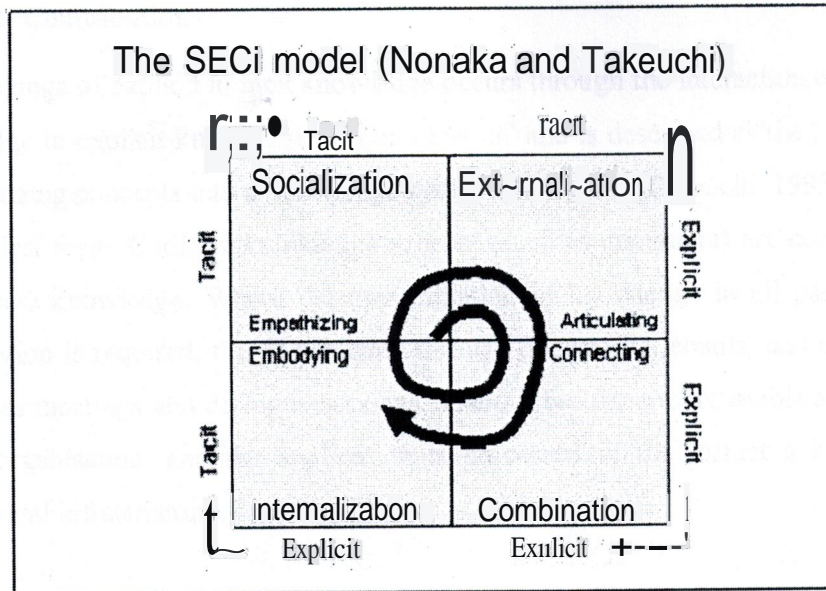


Figure (6). Source: Nonaka and Takeuchi (1999). The knowledge-creating process: SECI model.

#### 2.3.3.3. Externalisation

The conversion of tacit into explicit knowledge (Nonaka & Takeuchi, 1995, p. 66) requires articulating tacit knowledge through dialogue and reflection. Tacit knowledge begins to evolve into explicit knowledge so that within the institutional tacit knowledge is expressed by individuals in an easy to understand form, and becomes a whole through interviews between the institution and its members face-to-face. Managers facilitate creative and essential dialogue, the use of thinking, and the use of metaphors in dialogue in concept creation. It means converting tacit knowledge into explicit knowledge and it is expressed in various explicit forms (Digital or Avatar). It also transforms knowledge into models and assumptions for project teams.



#### **2.3.3.3.4. Combination**

The exchange of explicit to tacit knowledge occurs through the interaction of explicit knowledge to explicit knowledge or 'combination' and is described as the process of systematizing concepts into a knowledge system (Nonaka & Takeuchi, 1995). This is its simplest form. Codified knowledge sources (such as document) are combined to create new knowledge. Where the dissemination of knowledge in all parts of the organisation is required, this is achieved through documents, emails, and databases, as well as meetings and dialogue sessions. Then, it becomes more usable and useful to the organisation, and the application is processed in the format a knowledge institutional infrastructure.

#### **2.3.3.3.5. Internalisation**

Explicit to explicit is 'closely related' to 'the traditional notion of learning' and to 'learning by doing' (Nonaka, 1994, Nonaka & Takeuchi, 1995). For example, a training program in larger organisations helps the trainees to understand the organisation and themselves in the whole (Nonaka & Konno, 1998). It is the process by which they are able to understand and absorb knowledge and is passed on to all members of the organisation, to be a motivation and influential the engine to generate and create new tacit knowledge of individuals. This is then processed again on a regular basis, repeatedly, within four patterns and the Nonaka model's effect is amplified. The spiral becomes larger in scale as it moves up the ontological scale.

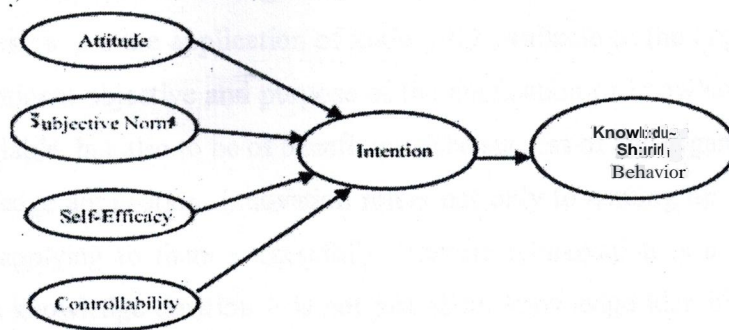
KM is based on six basic processes in organisations. These are identification; auditing, creation, sharing, storage, and application of knowledge. Each process has sub-processes; these main processes and sub-processes are closely related to the internal and external environment of an organisation. Internalisation of newly created knowledge is the conversion of explicit knowledge into the tacit knowledge of the organisation.

#### 2.3.3.4. Knowledge Sharing

Knowledge-sharing intrinsically means the generation of the beneficiary knowledge of face-to-face communication. An effective mechanism for gaining knowledge is to request help from another, i.e. someone who may possess the knowledge or expertise required. This suggests that face-to-face interactions and conversations can be a successful course for knowledge-sharing, and conversation is the effective means of sharing knowledge between people. According to Sharratt & Usoro, 2003, sharing is a process whereby a resource is given by one party and received by another. In addition, knowledge sharing, it is the process by which individuals collectively and its creating refines a thought, an idea or a suggestion in the light of experience'. (Chua, 2003). Additionally, according to Othman & Skaik.2014, attitude, subjective norm, self-efficacy, and controllability then intention for knowledge sharing as displayed in Figure (9). Knowledge sharing is the process of mutual communication of knowledge created by individuals or groups in the organisation. If people understand that sharing their knowledge helps them do their jobs more effectively; helps them retain their jobs, helps them in their personal development and career progression, rewards them for getting things done (not for blind sharing) and brings more personal recognition, then knowledge sharing will become a reality (Sagsan, 2007). Some factors are helpful for sharing knowledge:

- Strengthening the supportive environment for exchange knowledge in ideas between people
- Activating the role of the media and employ them to transfer of knowledge
- Facilitating access for all employees to knowledge bases owned by the organisation.
- Evaluating levels of employee performance.





**Figure (9).** Source: Othman, R & Skaik, H. (2014) Determinants of Academics' Knowledge Sharing behaviour in United Arab Emirates Universities.

#### 2.3.3.5. Knowledge Storage

Knowledge storage processes include Keeping, Maintenance, Search, Accessing and Retiring (Michal, 2002). Knowledge storage uses specialised systems such as records, databases, human processes, collective individual memory, and consensus. Knowledge storage process underscores the importance of organisational memory; organisations are at a greater risk as a result of the loss of much of the knowledge held by individuals who leave, for one reason or another. Recently, knowledge storage and retention have been very important, especially for organisations that suffer from high rates of turnover of work and are dependent on the recruitment, and they use format interim advisory contracts to generate knowledge.

#### 2.3.3.6. Knowledge Application

The objective and purpose of KM processes are the application of knowledge available to the organisation, so it is one of the most prominent of KM processes. The application of knowledge means knowledge investment; getting knowledge, new knowledge and feedback on identifying knowledge again, in new knowledge processes. It is stored and sharing is no longer sufficient, the important thing is to transfer this knowledge to its implementation. According to Hone, (2009), "Science is not just about knowledge but also the application of knowledge". Knowledge is no guarantee of the success of knowledge processes, but the knowledge application is a guarantee of success. All earlier KM processes do not achieve anything of benefit if





## **CHAPTER THREE**

### **HIGHER EDUCATION**

Higher education is provided by a college or university (Webster, Dictionary). Higher education comes at the top of the educational hierarchy it is the last stage of education experienced by the individual it provides the individual with high qualifications and skills; it is helpful in getting a job, and it also gives a prestigious social status. "Higher education, post-secondary education, or third level education is an optional final stage of formal learning that occurs after secondary education." (Wikipedia.org).

The scientific development of any society is the benchmark of progress, and it is the responsibility of the universities and educational institutions to provide this discipline. Moreover, "higher education has acquired an unprecedented role in present-day society, as a vital component of cultural, social, economic and political development and as a pillar of endogenous capacity-building, the consolidation of human rights, sustainable development, democracy, and peace, in a context of justice" (UNESCO, 1998).

As an above grade level education takes a minimum of three years to complete more typically four it will have a theoretical basis and will be at a level that would qualify someone to work in a professional field. These disciplines are often taught in an environment that includes advanced research activity. In short, Higher education means a college or University education.

#### **3.1. The Importance of Higher Education**

Higher education is the key to the success of any nation, economically, socially, scientifically and politically. Thus if any country wants to raise the level of community socially, economically or politically, the importance of general education and Higher education, specially must be understood allocating a large percentage of the state budget for higher education and scientific research. If the budget allocated for higher education and scientific research in countries such as the United States of America, the United Kingdom, Singapore, and Canada etc. is considered we see that they are devoting enormous budgets for education and scientific research in the certainty of the importance of education for the individual and society as a whole. On the contrary, third world countries in the third world devote a very small budget for

scientific research and pay little attention to higher education. This is one of the main reasons for the deterioration of the economy, living standards and low per capita state budget. This can also lead to the diminishing of the status of an interactive political state between the countries of the world. We can say that there is a direct correlation between attention to higher education and the progress and prosperity of the state in various fields. For example, in 1987 the Singapore government, devoted four percent (4%) of the gross domestic product (GDP) to education, The government's goal in the 1990s was to increase spending to six percent (6%) of GDP, which would match the levels of Japan and the United States (Hays, 2008). This has been achieved ahead of Singapore's education schedule. Singaporean students have received an award for the Sciences in 1995, 1999 and 2003. Now, Singapore has become an international beacon for science. However, if the state focuses on human development it will be the beginning of economic, social, political, and psychological development. It is the way to improve the community and the state as a whole. States must encourage their people to progress, innovation and creativity in various fields.

### **3.2. The Functions and Activities of Higher Education**

UNESCO's World Conference 46 was held in 1998. It identified the functions of higher education, and there were divided into three main functions:

1. Academic programs: listing of academic programs, policies, and related information.
2. Scientific research: A process carried out by the researcher to reach a finding on an issue or the particular problem (research topic) by way of scientific organisation (methodology) in order to access the (results of research). Scientific research comprises of the main pillars for the advancement of civilisation in any country. Discoveries come through research, follow-up events, ideas, attempt to develop, support and sponsorship. Many innovations, discoveries, and inventions are a result of innovative ideas of university professors and distinguished students. 'A goal of scientific research is not only pointless or even encumbering in practice, but can be an obstacle to research itself in its early stages' (Bunge, 1967).
3. Community services: Higher education normally adjusting to meet the demands of societies. The education in the middle Ages was concerned more with matters



of religion and philosophy of (Aristotle) more than economic development. After the commencement of the industrial revolution the countries began to adopt partially to the needs of the community, where, in the 19th Century education in the disciplines of science, engineering and accounting were provided to provide candidates for the new jobs that emerged. Only in the 20th Century, was education considered to encompass almost every profession and all the disciplines required by the new society and the community. These include business management, knowledge management, sociology and others (Forest, 2007).

### **3.3.Higher Education Ingredients**

The higher educational services offered by universities rely on several elements, inputs, the educational process, and outputs.

#### **1. Inputs**

This comprises of a group of material and human resources in order to achieve the objectives of the education system. The input consists of:

- **Students:** Students in the gradient stage are the ones who attend places of higher education to get a bachelor's degree, and graduate students who obtain a university degree first and study for a master's or doctorate. The student's role in education is crucial and should go beyond the traditional view of the student as customer or recipient of knowledge. Students are the raw material for education and the primary products of educational transformations. "Students are highly motivated to learn and get ahead of their peers. In developing countries, a student who is successful in education will be able to climb the ladder of personal economic prosperity faster than those who are not successful" (Anderson, 2011).
- **Teaching staff:** A faculty member is considered as the basic entry level and is important in the educational process. The size of the body of teaching staff and efficiency has a direct correlation between teaching and educational process.
- **The material means** The buildings and other equipment of educational institutes.

## **2. Educational Process**

This is the process in educational institutions (teaching operations, training, courses, and curriculum), and it must have modern curricula in order to keep pace with scientific developments and to fit the requirements of the society environment. Students are encouraged to take courses and to participate in projects with students from other disciplines, allowing them to benefit from the experience of the whole university fewer institutional barriers to this cross-fertilisation makes the process more creative and make learning and innovation possible (Jonathan, 2008). According to Williams, 2011, students need to see the point of it all and know what they personally will get out of the educational process. Materials, tools, and equipment needed in the educational process should be determined, obtained, and modernised, so active learning is promoted. The teacher must be well trained, must focus and monitor the educational process, be dedicated and responsive to his or her students, and be inspirational. It is assumed that this shift to increased self-participation, personalised learning, and self-ownership would be viewed positively by teachers and by other stakeholders involved in the educational process.

## **3. Outputs**

If the final results of the operations are performed through the input and the preparation of graduating students, the students must graduate through achievement in both qualitative and quantitative terms (the outputs of the educational process are the number of graduates in quantitative terms and their efficiency in terms of quality). (Nawal, 2012).



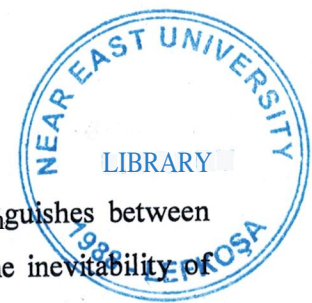
### **3.4. Academic Accreditation Standards in Higher Education**

The recognition of a program or an educational institution is a process within an agreed standard, including the institution's commitment to an achievable qualitative level of education. It also applies to a group of academic accreditation standards in order to improve the quality of education and is derived from international standards of education. Amendment of some axes to fit the standards and the nature of the universities in the third world may be necessary, so as to match the researcher appropriate to the current reality of our study and the study population the following are the applied standards (Amin, 2011):

#### **1. University Administration**

The university administration is the starting point of any reform, development or modernization of the university system, and the most important task is to make plans and to put strategies in the place. It is the process through which the conduct of the elements in educational institutions is conducted to achieve the set goals. Universities consist of complementary institutions, including structures, units, departments, and staff with a high degree of knowledge of modern management skills to enhance the performance of working towards the achievement objectives of the university, and the university's mission. Moreover, this requires effort in setting in place patterns of rehabilitation in university institutions, so the overall quality of entrance to modern administrative success is achieved. This ensures that the whole University or the educational system that seek to be managed in the best possible way always translate the plan into visible reality reflected directly on the learning outcome. It appears in the surrounding community through tangible progress on an intellectual level and the material level. Any improvement in the image of the community as a whole is due to the extent of the commitment to the standards of administration. These refer to the fact that standards to improve and to choosing the right man for the right place. An excellent university administration does not come from a vacuum, but through education. This generation is aware of the meaning of commitment in all its aspects.

The great leader at the summit of the pyramid is an indication of his followers' ability and achievement. The administration executes the laws and rules of the passage to work, the form in which these laws and rules are treated and the interaction between the university administration and those responsible for the implementation of educational



and research programs. Community service is the one which distinguishes between technical management and interactive administration; the latter is the inevitability of our universities as they raced into the twenty-first century. Here, we must focus on the importance of interactive administration not only as an option but also as a necessity required by local and global variables and stunning development in the revolution of information and communication technology. However, the university administration is the central nervous system and peripheral body of the university which achieves wise responses. The lead of management, teamwork such as bike-wheel bilateral which represents back wheel knowledge and the regulations and laws where the elements of forward movement knowledge workers represent the front wheel: relationships, their interests, needs. Therefore, it gives driving the bike and go through the transmission (of power) to the rear wheel strength and a clear goal. This standard includes the key indicators for the university administration, which are (Amin, 2011):

- Organisation and Leadership.
- Communication.
- Planning and Programming.
- Resource Allocation.
- University Policies
- Participatory Workers.
- Responsibilities and Authority.

## 2. Quality Management System

Most of the quality management applications focus on the management side more than the educational side. If they continue to focus on the importance of the pioneers of the quality management process in the adoption of any institution of quality this can stifle new ideas from appearing and restrain individual talents and creativity. 'A quality management system is a management technique used to communicate to employees what is required to produce the desired quality of products and services and to influence employee actions to complete tasks according to the quality specifications' (Stralser, 2004). According to Doherty 1994, 'The organisational structure, responsibilities, procedures, processes and resources for implementing quality management'. The Purpose of a Quality Management System is:



- t/ To establish a vision for the employees.
- t/ To Set standards for employees.
- t/ To Build motivation within the company.
- t/ To Set goals for employees.
- t/ To help fight the resistance to change within organisations.
- t/ To help direct the corporate culture (Geoffrey D. Doherty, 1994).

### **3. Development of Quality and Continuous Improvement**

Universities of all types and with different goals always remain in need of development of quality standards and continuous improvement (CI) in their work. CI management is a philosophy that aims to work on the ongoing development of processes and activities related to machinery, materials, personnel and production methods.

The CI process is the essence of total quality management (TQM). It is lifeblood in the veins of TQM. Its methodology is based on the introduction of CIs in all work areas in universities, in order to ensure permanent adapting to changes in both internal and external environments. CI is an essential requirement to the success of quality managed (QM) and it aims to reach a full agreement by the CI in the production processes of the organisation. Furthermore, the quality and its development have an impact on teamwork and the ability to achieve an improvement in communications. The inclusion of all employees in solving problems or obstacles leads to improvement in the relationship between management and workers, it decreases the labour turnover rate and increases the loyalty of employees and their affiliation to the universities.

#### **4. Customer Satisfaction (Student and Community)**

Customer satisfaction is a more significant reason for attracting all institutions and for higher education institutions, particularly universities the student body and community satisfaction is most important. Student and community satisfaction is a collection of positive sensations (acceptance, happiness, enjoy) felt by the student towards him- or herself, his or her job, and the institution where he studies, and that hard work and the prospect of his future life to the real enjoyment (fun at work and in life).

Many of the higher education institutions uses measures of the student data. This can include the student satisfaction to provide a better understanding of the level of academic, social and psychological services, university and environmental conditions. The results can be extrapolated to improve and change those environments; therefore, in the light of this information, develop conditions are developed for more help in order to ensure the development and growth of the students and attitudes of the university.

Student satisfaction within this perspective is an indication of the ability of the academic institution to meet the needs of numerous, diverse students, and a measure of the efficiency, success, survival, and continuity of the work of the institution.

#### **4. Scientific Activities of the University**

The scientific activities of the university have a great importance in modern universities. These activities are related to the development of the spirit of scientific research and the training of students and pupils in logical thinking skills, and they help reveal their interest in science and management. The importance of these activities is also highlight of the nature of the times in which we live, where science and its implications affect all aspects of life. Scientific activities are also the reason for providing students with appropriate, current scientific trends, talents, and abilities together with the scientific orientation of the students. The student discovers early in his life and requires scientific knowledge for his welfare and development. Once refined and heading in the right direction Scientific Activities can work on the application of scientific knowledge in practice, invest spare time in the practice of some hobbies, gain new scientific knowledge, learn methods to solve problems, access methods to scientific knowledge, and apply security and safety conditions at work. Scientific Activities can estimate the impact of working in scientific fields in community service efforts; Scientific Activities can produce the student training manual, identify how to operate appliances and equipment, assess the capability of



hardware models and interpret statistics relating to hardware manufacturing development and enrich the teaching of science. Within school, this means education, samples from its environment where the school's students serve to provide scientific services for them, such as displaying scientific films, establishment of scientific exhibitions. This lead to the development of scientific awareness for students and encourages students to specialise in science and supports the spirit of scientific research and innovation and creativity among students.

## 5. Other University Activities

The extracurricular activities have great importance to developing and strongly build the personality of students. These activities develop student's confidence which enables him/her to confront different situations and obstacles in the life. Extra curricular activities create an opportunity to invest time and students get multiple experiences through active participation. Multidimensional talent and creativity are developed. For instance, in a classroom setting in a university or any academic field, where a professor or teacher spends most of their time with students, which directly helps to build and strongly develop a good and understanding relationship with students. A professor must be a role model, supportive, counsellor, and a good friend and play an important role in a student's life. Extra curricular activities concerned with the methodology in the educational processes which includes following aspects:

- Implementation of the plan for student's activities which includes the cultural, social and sports activities;
- Skill development, guidance and counselling for students.
- Face and overcome obstacles very confidently.
- Moreover, it includes health care.

### **3.5. Role of KM Processes in Higher Education**

The regulatory environment of higher education institutions, especially universities, is one of the most suitable environments to apply the concept of (KM) processes compared to other organisations. The higher education institutions in different types and patterns, are responsible for the preparation and creation of cadres on highly qualified and trained personnel. In addition, the higher educational institution is a vital element for all the comprehensive community development operations, whether within government or the private sector. In recent years, a wide range of business techniques, including Performance Management, Quality Assurances, and total Quality Management have a direct or indirect impact on education. By its nature, the suitable and the most invested environment in the application of KM processes is the higher education. One of the main functions of education is the transmission of knowledge, and KM is the knowledge from a related perspective. Education should find it easier to embrace the ideas of KM processes and techniques and there is a need to develop systematic and organised systems of KM processes in higher education.

Higher education is the reservoir of knowledge and the potential of knowledge can be used, if it is organised and managed in a systematic and effective manner. Most organisations do not give preference to the internal knowledge, and most knowledge was lost through attrition and changes in the organisation. Much of the knowledge and knowledge resources have not been identified, recorded, modified or initialized because of the absence of a good system. It is the duty of the information manager or knowledge manager to develop mechanisms to identify, to map internal competencies, to record, to store, to use internal and external resources and to share these through intranets for knowledge creation. Universities need to meet the desires of the worldwide society, they should embrace and adjust best practices from ICT and globalisation. Generally, the fundamental elements of the university need to make and spread knowledge: this is done through exploration, education and outreach programs. According to Metaxiotis, 2003, describe the three main missions of universities:

- Education to prepare students to become successful lifelong learners.
- Research to grow the frontiers of human knowledge and promote creativity.
- Service communities to participate in outreach activities that serve local, national and international communities.



The Higher education must have more cutting-edge technologies than companies and they must quickly improve because the university has to provide the service to them for their innovation and practical partnership. The report of the International Commission headed by Delors, in 1998, states that the life in the twenty-first century depends on four pillars: learning to know, learning to do, learning to live together, and learning to be.

### **3.6. Success Factors of KM Processes in Higher Education**

As the saying goes: "If you can't measure, you can't manage". Similarly, "What you measure wrong, you manage wrong." Establishing the wrong measures will lead to far worse results than establishing no measures at all (Thierauf, 1999). For example, can we drive a car without meters (speed control, gasoline, and machine; or imagine a company without income statement; or the state without indicators, standards, and goals? (Alshugairi, 2015). Furthermore a Higher Education needs success factors on how it can be improved, invested and progressed. So, the following are the views of some authors:

1. Knowledge strategy that identifies users, sources, storage strategy, knowledge, knowledge management and KM process (Jennex & Olfman, 2005).
2. Organisational culture.
3. Trustworthy teamwork.
4. The motivation for creating new knowledge, reuse and share (Jennex & Olfman, 2005).
5. Depending on Integrated Technical, Infrastructure; including networks, database repositories, computers, software, KM (Jennex & Olfman, 2005).
6. Encourage an organisational culture and structure that supports learning and the sharing and use of knowledge.
7. Senior management support, including allocation of resources, leadership, and providing training (Jennex & Olfman, 2005).
8. Award for excellence in the implementation of KM. For example, instigate awards for the best team or the best sector; and opportunities to participate in the KM teams and projects for those who demonstrate the enthusiasm and willingness to work and bear the responsibility (Abokhodiar, 2013).

9. Support of multiple channels for sharing knowledge (Davenport & Prunsh, 1998).
10. Clearly KM purpose/goals.
11. Punishment for those who does not apply the laws of a university.
12. Mother Tongue, English language; mathematic-technologies.
13. Teachers are the most important success factors of innovation and knowledge creation. Teachers must:
  - Respect the students.
  - Encourage discussions, and expression.
  - Accept students' ideas.
  - Encourage students' self-confidence.
  - Evaluate of students' ideas
  - Create an appropriate environment for students, especially in class.
  - Create a relationship with students.
14. Implement KM strategies.
15. Maintain the currency of the organisation's knowledge (Jones & Sallis, 2002).
16. Providing work process for converting tacit knowledge into explicit knowledge.
17. Develop the motivation to share and use knowledge (Jones & Sallis2002).
18. Measure and evaluate the effectiveness of the KM.
19. A flexible of organisational structure.
20. Analysis of KM processes.



### **3.7. Benefits of KM Implementation in Higher Education**

KM system should keep the flow of knowledge and KM processes, including virtual teamwork and the development of communities, practice, and interests. In addition, the value of knowledge may be added to through collaborative effort, in order to improve the competitiveness of Higher Education. However, Universities play vital roles in disseminating knowledge not only to students, but also staff, because they serve as knowledge providers and their main business domain falls in the knowledge category. Thus, information keeping and dissemination are important key factors in an education sector. According to Kidwell & Johanson, 2000, when KM tools are applied effectively, this could lead to the ability to make better decisions, reduce cycle time development (curriculum development and research) productivity, to improve academic and administrative services and to reduce costs. According to Kumar, 2015:

- Speed of curriculum revision is Improved and updated.
- Faculty development efforts are enhanced, especially for new facilities.
- Administrative services related to teaching and learning with technology are Improved.
- Interdisciplinary curriculum design and development are facilitated by navigating across departmental boundaries.

### **3.8. Relationship Between KM Processes and Higher Education**

Knowledge management today is the most acceptable entrance of academic and administrative development organizations, treatment of their problems, and it enables their Leadership, and qualifies their employees in order to gain knowledge and help close the gap between what they know and what they are applied. This is because the importance of knowledge in institutions of higher education, its importance emerged management. Knowledge management is represented in the methodological process to guide the processes of knowledge and ensure its effectiveness.

It is a gateway to add or create value added through the merger or compound between its processes in order to find a cognitive synthesis, better than they are today, For example, data or information, with the launch of intellectual abilities and cognitive skills of workers in the university at all levels. This is to build and develop

the skills necessary to address the variables and to increase the identification of problems of change, and anticipate them at an early point skill, allowing the university to be prepared to face them and take the opportunity to grow and develop at the best (Laudon & Laudon, 2007).

According to Badah, 2012, The administrative empowerment secures the performance, and the effectiveness of the workers based on the KM processes, to use of the human resources more Efficiently, the development of the service provided and quality thereof, and improvement of the workers motivation and commitment as regard to the work implementation. It further enhances the positive feeling with the workers and provides them with a sense of personal and professional balance, as well as providing them an opportunity to practice the cognitive exercises, in order to find the alternatives and effective methods to implement the works. In Addition, the occupational satisfaction of the workers. Yet, has been enhanced the development of the Higher Education and Scientific Research requires an integrated matrix of the modern administrative methods, such as carrying out the knowledge management processes, workers' administrative empowerment, which helps to address the challenges and solving the problems. It also helps in administrative development and excellence in a world characterized by the renewed and accelerating change. This makes it in need for applying a KM process strategy through:

- Understanding the internal and external knowledge needs.
- Collecting the required data and information, and analysing them for the purpose of making use of.
- Publishing and circulation of knowledge,
- Proper planning and implementation of the knowledge management.
- Controlling an evaluation of the knowledge management strategy.



## **CHAPTER FOUR**

### **METHODOLOGY**

The methodology of this research involves designing the research by identifying dependent variables (Higher education) and independent variables (KM processes). The researcher used the sample descriptive/analytical method because it is suitable to the nature of the study and the objectives intended to be achieved, and the nature of the data to be collected. In addition, the researcher found that the questionnaire is the most appropriate instrument to achieve the objectives of this study and statistical software (SPSS) V.22 used to analyse the data.

#### **4.1. Research Population**

Duhok University has two types of Colleges, Scientific Colleges, and Humanities Colleges. The researcher conducted this research at Humanities Colleges at the Duhok University because the Humanities Colleges have a great importance for the development of the culture of the Society more than Scientific Colleges, especially in the undergraduate departments. The researcher chose the Duhok University because the title of the thesis is about KM processes in Higher education and Duhok University is the oldest and biggest universities in a the researchers city. Moreover, Most of the government employees and the staff of national companies are graduates of this University. In addition, this university looks for the demands of streets.

The Humanities Colleges include:

- COLLEGE OF ADMINISTRATION AND ECONOMICS
- COLLEGE OF BASIC EDUCATION
- COLLEGE OF HUMANITY SCIENCES
- COLLEGE OF LAW AND POLITICAL SCIENCES
- COLLEGE OF PHYSICAL EDUCATION

#### 4.2. Research Sample

It includes academic and administrator's staff holding (Ph.D., Master, High Diploma and Bachelor) degrees in humanities college at the Duhok University, which includes (984) according to a statistic of administration and the academic affair at Duhok university (academic year) 2015-2016. So, the sample was taken from Complete Census sample.

#### 4.3. Data Collection

In order to reach the necessary data and information to answer the questions about research and testing of hypotheses were available which have a number of methods as follows:

1. **The Theoretical Side:** It adopted the researcher to cover the theoretical aspect of the research which is available from Arabic and foreign sources on the subject of the study including the following:
  - Studies.
  - Journal.
  - Conference proceedings.
  - Books.
  - Thesis and dissertation.
  - The international information network (Internet).
2. **The Practical Side:** The researcher depends on the implementation of the practical study on personal interviews with a number of heads of department at the Duhok University in order to clarify on the study subject as well as taking the data will be helpful for research, then the researcher found that the questionnaire is the most appropriate instrument to get data.
3. **Time Limits:** The researcher took 10 days for distribution and collection of questionnaire data from 2/5/2016 to 11/5/2016.
4. **Spatial Limits:** Limited to the Duhok University, (<http://web.uod.ac/>) - Kurdistan Region of Iraq.



#### 4.4. Questionnaire Design

The researcher designed a questionnaire according to the following steps:

- The researcher designed the questionnaire to achieve objectives of the study, which included (39) statements distributed among three areas (KM, KM processes and Higher Education) with Biographical Information about the members of the sample (Gender, age, scientific qualification, organisational position, marital status, workplace and years of experience) as shown in table (4:1), researcher adopted these studies of (Telbani, Bedier, Raqab 2015, Al-Othman, 2013 and Otaibi, 2007) for the designing questionnaire.

Table (4:1)

Number	Field		Number of Statements
1	Knowledge management		7
2	KM processes	Identification knowledge	3
		Knowledge Auditing	3
		Knowledge Creation	4
		Knowledge Sharing	4
		Knowledge Storage	4
		Knowledge Application	4
3	Higher education		10
Total			39

- The researcher used a scale of (likert quinet) to answer the statements as:

Levels	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
Points	5	4	3	2	1

#### 4.4 The Research Tool

The researcher used the questionnaire as a tool for the research, which is a convenient tool in order to obtain information, data, and facts associated with a certain reality.

276 questionnaires were distributed; because the sample of research includes 984 staff of the college (administration and economics, basic education, humanity sciences, law and political sciences, physical education), Depending on (Richard Geiger equation) J~ distribute the questionnaires, 245 responded, which represents the 88.76%.

#### 4.4 Results

This chapter of this thesis (The role of the KM processes in higher education and its application in Duhok University) demonstrates the findings of this study, which have resulted from the analysis of the collected data, based on the pre-discussed literature review. In terms of data analysis, a descriptive analysis was initially performed to provide information pertaining to the biography of the respondents. At a later stage, the Pearson correlation was used in order to test the relationship between the variables. Then, multiple regression analysis was conducted to see if the impact hypothesized between the dependent variables and the independent one actually exists. It should be mentioned that all the analytical processes have been performed by using the V.22 of the software SPSS. 276 questionnaires were distributed; because the sample of research includes 984 academic and administrative staff of college



(administration and economics, basic education, humanity sciences, law and political sciences, physical education), so the researcher used Richard Geiger equation for distributing the questionnaires, 245 responded, this represents 88.76%. This is considered a high proportion of respondents indicate cooperation and interest in the subject. The statistics of the members of the study sample in terms of (Gender, age, scientific qualification, organisational position, marital status, workplace and years of experience). However, explaining that through Frequency and the percentage of each classification.

#### 4.5 Biographical Information

##### Age

**Table (4:2): Age Distribution of Respondents**

		Frequency	Percent
<b>Valid</b>	Under 30y	<b>74</b>	<b>30.2</b>
	Between 30y and 40y	<b>93</b>	<b>38.0</b>
	Between 40y and 50y	<b>53</b>	<b>21.6</b>
	Between 50y and 60y	<b>22</b>	<b>9.0</b>
	Above 60y	<b>3</b>	<b>1.2</b>
	<b>Total</b>	<b>245</b>	<b>100.0</b>

The participants in this study came from different age levels, which have been demonstrated in table 4:2. While 30.2% were under 30 years of age, only 21.6% were between 40 and 50 years of age. Another age group with high level of participants is between 30 and 40 years that held for 38.0% of respondents. 9.0% were between 50 and 60 years of age and just 1.2% had been above 60 years.

## Gender

**Table (4:3): Gender of the Respondents**

		Frequency	Percent
Valid	Male	153	62.4
	Female	92	37.6
	Total	245	100.0

As represented in the above table, among 245 participants in this study, 153 were a male who account for 62.4% of all participants while 92 of them were female with the percentage of 37.6%.

## Marital Status

**Table (4:4): Marital Status of the Respondents**

		Frequency	Percent
Valid	Single	71	29.0
	Married	174	71.0
	Total	245	100.0

The above table shows the marital status of the respondents in the present research. As it is shown, more than half of the participants nearly (71 %, n=174) were married, while only about (29%, n=71) of the participants were single.



## Scientific Qualification

**Table (4:5): Scientific Qualification of the Respondents**

		Frequency	Percent
Valid	PhD	65	26.5
	Master	90	36.7
	High Diploma	12	4.9
	Bachelor	78	31.8
	Total	245	100.0

The table demonstrates the educational level (qualifications) of the participants. As it can be seen from the above table, the higher rate of the respondents' approximately (37%, n = 90), were with the qualification of Master degree. Whereas, the rest of the other groups, bachelor, Ph.D. and high diploma were only (31.8%, n=78) (26.5%, n=65), and (4.9%, n= 12) respectively.

## Work Place of the Participants

**Table (4:6): Work Place**

		Frequency	Percent
Valid	College of Administration and Economics	70	28.6
	College of Basic Education	49	20.0
	College of Humanity Science	54	22.0
	College of Law and Political Sciences	35	14.3
	College of Physical Education	37	15.1
	Total	245	100.0

The above table shows the place for the respondents. As seen, the higher rate of the respondents was from College of Administration and Economics (28.6% n= 70). Whereas the rest of the participants are from the College of Humanity Science, College of Basic Education, College of Physical Education and College of Law and Political Sciences only (22%, n=54) (20%, n=49) (15.1%, n=37), and (14.3%, n= 35) respectively.

### Organizational Position of the Participants

**Table (4:7): Organizational Position**

		Frequency	Percent
Valid	Dean	4	1.6
	Vice Dean	4	1.6
	Head of Dept.	12	4.9
	Faculty Member	140	57.1
	Administrative Job	85	34.7
	Total	245	100.0

The above table shows the position of the respondents. As seen, the majority higher of the respondents was a faculty member (57.1% n= 140). whereas the rest of the participants' positions, administrative job, head of department, dean and vice dean were only (34.7%, n=85) (4.9%, n=12) (1.6%, n=4), and (1.6%, n= 4) respectively.



## Work Experience of the Participants

**Table (4:8): Work Experience**

		Frequency	Percent
Valid	Less than 5 years	71	29.0
	From 5-10 years	72	29.4
	From 10-15 years	76	31.0
	More than 15 years	26	10.6
	Total	245	100.0

The above table shows the tenure years for the respondents. As it's obvious, the higher rate of the respondents was from group from 10-15 years (31.0% n= 76). Whereas, the rest of the participants work experience, From 5-10 years, Less than 5 years and More than 15 years were only (29.4%, n=76) (29.0%, n=71), and (10.6%, n= 26) respectively.

Table (4:9) Description the Knowledge Management

redrO	Mean	Sum	Levels					Description	Statements
			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree		
Fourth	3.64	891	2	15	70	141	17	N	First
			0.8	6.1	28.6	57.6	6.9	Percent	
Third	3.66	897	2	16	60	152	15	N	Second
			0.8	6.5	24.5	62	6.1	Percent	
First	3.76	921	--	17	71	111	46	N	Third
			--	6.9	29	45.3	18.8	Percent	
Sixth	3.09	758	6	53	103	78	5	N	Fourth
			2.4	21.6	42	31.8	2	Percent	
Fifth	3.12	764	3	60	100	69	13	N	Fifth
			1.2	24.5	40.8	28.2	5.3	Percent	
Second	3.69	904	4	15	67	126	33	N	Sixth
			1.6	6.1	27.3	51.4	13.5	Percent	
Seventh	3.08	754	16	49	96	68	16	N	Seventh
			6.5	20	39.2	27.8	6.5	Percent	

#### 4.8 Questionnaire Reliability

Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer the Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. Moreover, the following rules of thumb are provided for Cronbach's alpha values: "> .9 - Excellent, > .8 - Good, > .7 - Acceptable, > .6 - Questionable, > .5 - Poor, and < .5 - Unacceptable" (George & Mallery, 2003). As it is projected on the table (4:8), all of the factors; loadings are approximately above 0.7 proving that the study has been conducted with good discriminate validity.



Table (4:10): Questionnaire Reliability

Variables		Cronbach's Alpha	N of Items	Reliability
Knowledge Management		.68	7	Questionable
KM processes	Knowledge Identification	.79	3	Acceptable
	Knowledge Auditing	.74	3	Acceptable
	Knowledge Creation	.73	4	Acceptable
	Knowledge Sharing	.76	4	Acceptable
	Knowledge Storage	.79	4	Acceptable
	Knowledge Application	.80	4	Good
KM Processes (Total)		.93	22	Excellent
Higher Education		.86	10	Good

#### 4.9. Descriptive Statistics

The level of Consumer's Perception Toward E-payment.

Table (4:11): Descriptive Statistics for the Study Variables

Variables	Mean	Std. Deviation	N
Knowledge Management	3.43	0.49	7
KM Processes	3.25	0.54	22
Higher Education	3.15	0.53	10

The above table demonstrates the descriptive statistics for the study variables (dependent and independent variables). As it is obvious, the mean and standard deviation values for the knowledge management, knowledge management process and higher education were (M=3. 43, SD=0. 49), (M=3. 25, SD=0. 54) and (M=3. 15,

SD=0.53) respectively. Since the mean value is above the midpoint of the 5-point Likert scale, it can be asserted that the research participants show a moderate level of perceptions toward knowledge management. In addition, the standard deviation value refers to an acceptable distribution of responses within the research sample.

#### 4.10. Correlation Analysis

**Table (4:12): Pearson's Correlation Coefficients of the Study Variables**

Correlations								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Knowledge Identification (1)	Pearson Correlation	1	.585**	.559**	.539**	.518**	.545**	.589**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
Knowledge Auditing (2)	Pearson Correlation		1	.626**	.673**	.537**	.576**	.518**
	Sig. (2-tailed)			.000	.000	.000	.000	.000
Knowledge Creation (3)	Pearson Correlation			1	.716**	.638**	.652**	.631**
	Sig. (2-tailed)				.000	.000	.000	.000
Knowledge Sharing (4)	Pearson Correlation				1	.635**	.651**	.608**
	Sig. (2-tailed)					.000	.000	.000
Knowledge Storage (5)	Pearson Correlation					1	.646**	.598**
	Sig. (2-tailed)						.000	.000
Knowledge Application (6)	Pearson Correlation						1	.749**
	Sig. (2-tailed)							.000
Higher Education (7)	Pearson Correlation							1
	Sig. (2-tailed)							
**. Correlation is significant at the 0.01 level (2-tailed).								



The aim of the correlation test is to explain the strength and direction of the relationship among the studied variables. Therefore, in order to examine the associations between the independent variables and the dependent variable, Pearson correlation coefficient was used in the present study. Furthermore, the relationships among the predictors included in this research study were tested. Table (4: 12) shows that all independent variables have statistically significant positive relationship with depended variable.

**Table (4:13): Hypothesis Remarks**

Hypothesis	Relationship	Sig.	Remarks
HO (Total)	KM Processes '7 Higher Education	.751 **	Accepted
H1a	Knowledge Identification'7 Higher Education	.589**	Accepted
H1b	Knowledge Auditing'7 Higher Education	.518**	Accepted
H1c	Knowledge Creation'7 Higher Education	.631**	Accepted
H1d	Knowledge Sharing'7 Higher Education	.608**	Accepted
H1e	Knowledge Storage'7 Higher Education	.598**	Accepted
H1r	Knowledge Application'7 Higher Education	.749**	Accepted

#### 4.11. Multiple Regression Analysis

Regression analysis has been conducted in order to determine the effects between the dependent variable and independent variables. This has been done to measure to what extent these constructs measure the independent variable.

**Table (4.14): Model Summary**

Impact	H.	Independent Variables				N
Yes		Knowledge Identification				1
		Mean Square residual	F	B	$R^2$	
		18.683	129.170	1.546	0.347	
Yes		Knowledge Auditing				2
		Mean Square residual	F	B	$R^2$	
		20.939	89.070	1.306	0.268	
Yes		Knowledge Creation				3
		Mean Square residual	F	B	$R^2$	
		17.221	160.760	1.286	0.398	
Yes		Knowledge Sharing				4
		Mean Square residual	F	B	$R^2$	
		18.026	142.725	1.249	0.370	
Yes		Knowledge Storage				5
		Mean Square residual	F	B	$R^2$	
		18.380	135.191	1.226	0.357	
Yes		Knowledge Application				6
		Mean Square residual	F	B	$R^2$	



		12.571	310.123	1.660	0.561	
Yes		Total				Total
		Mean Square residual	F	B	$R^2$	
		12.467	314.749	0.339	0.564	

According to the Table (4:14), R-square equals to .564 that shows 56.4% of the dependent variables is affected by the independent variables. The Sig, The column indicates the P-value should be less or equal to 0.05 so that the significant impact between the independent and dependent variable can be deduced. According to sig values presented in Table (4:14), the significant strong impact between Knowledge Identification and Higher Education ( $r = 347^{**}$ ,  $p < 0.000$ ), is confirmed (H1), the significant strong impact between Knowledge Creation and Higher Education ( $r = 398^{**}$ ,  $p < 0.000$ ), is confirmed (H3), the significant strong impact between Knowledge Application and Higher Education ( $r = 561^{**}$ ,  $p < 0.000$ ), is confirmed (H6), the significant strong impact between Knowledge Auditing and Higher Education ( $r = 268^{**}$ ,  $p < 0.000$ ) is accepted (H2). Besides, the significant strong impact between Knowledge Sharing and Higher Education ( $r = 370^{**}$ ,  $p < 0.000$ ) found to be significant (H4). At the same time, the significant strong impact between Knowledge Storage and Higher Education ( $r = 357^{**}$ ,  $p < 0.000$ ) is found to be significant (H5). Thus, all the hypotheses were being accepted (Table 4:15).

#### 4.12. Regression Analysis (Hypothesis Test)

The multiple regression analysis is conducted to test the hypothesized effects between the dependent variable and independent variables. Regression consists of several hierarchical procedures during which the elements that are hypothesized to be potentially effective are added sequentially to the already existing model. This analysis method also projects the importance of each variable in predicting the dependent variable.

**Table (4:15): Hypothesis Remarks**

Hypothesis	Impact	Beta	R Square	Remarks
H01 (Total)	KM Processes7 Higher Education	.751	.564**	Accepted
H2a	Knowledge Identification7 Higher Education	.589	.347**	Accepted
H2b	Knowledge Auditing7 Higher Education	.518	.268**	Accepted
H2c	Knowledge Creation7 Higher Education	.631	.398**	Accepted
H2d	Knowledge Sharing7 Higher Education	.608	.370**	Accepted
H2e	Knowledge Storage7 Higher Education	.598	.357**	Accepted
H2f	Knowledge Application7 Higher Education	.749	.561**	Accepted

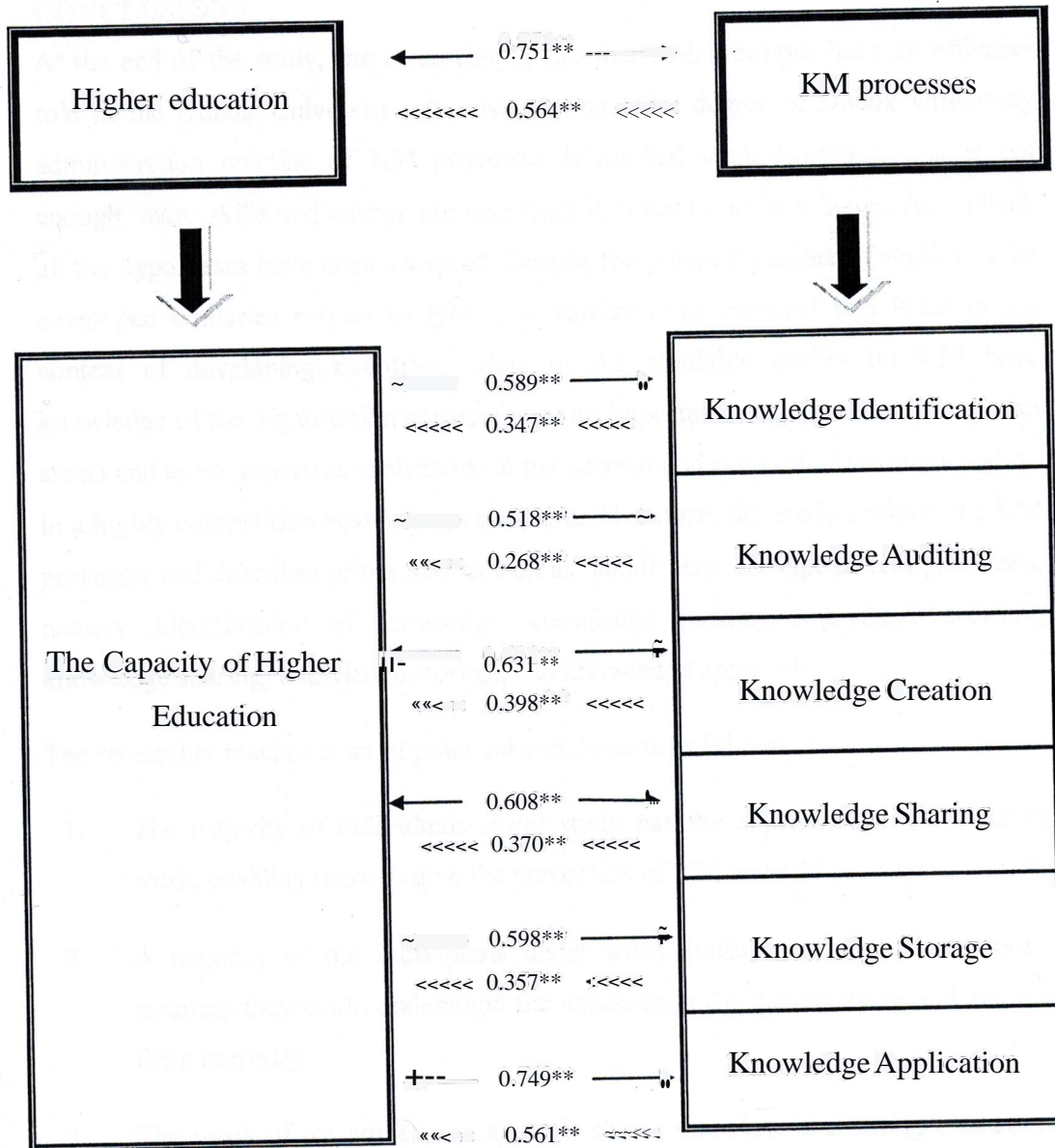
The findings of this study, which have resulted from the analysis of data gathered, based on the pre-discussed literature review. In terms of data analysis, the findings of the present study show that all the study variables have been significantly associated with the dependent variables. According to the outputs, the entire study hypothesis has been significantly associated with the dependent variables (Higher Education). Furthermore, to test the hypothesis related to the impacts, all of the hypothesis have been significantly impacted by the dependent variables (Higher Education).



## Research Conceptual Model

Dependent Variable

## Independent Variables



Correlation  $\longleftrightarrow$

Impact  $\leftarrow \leftarrow \leftarrow \leftarrow \leftarrow \leftarrow \leftarrow \leftarrow$

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

#### CONCLUSIONS

At the end of the study, the researcher found that KM processes have an effective role in the Duhok University administration and the degree of Duhok University administration practice of KM processes is applied well. However, this is not enough, more skills and energy are necessary in order to achieve better. As a result, all the hypotheses have been accepted. Despite the growing number of studies in the developed countries related to KM, few studies have explored this issue in the context of developing countries. Most of the available studies on KM have knowledge of the organisation considered as an important competitive advantage (an asset) and as an important contributor to the success and survival of any organisation in a highly competitive business environment. Therefore, this study analysis the KM processes and describes of the KM as well as identifying the type of KM processes, namely: identification of knowledge, knowledge auditing, knowledge creation, knowledge sharing, knowledge storage, and knowledge application.

The researcher reached a set of practical conclusions as follows:

1. The majority of individuals under study has the experience in the field of work, enabling them to give the perception of KM and KM processes.
2. A majority of the individuals under study holds academic qualifications meaning they could understand the variables in the questionnaire and answer them correctly.
3. The result of the correlation analysis shows that there is a strong indication that all independent variables have statistically significant positive relationship with the depended variable.
4. Further analysis revealed that the results displayed the existence of a significant effect of KM processes in higher education, as well as having a significant effect on each process of KM processes individually in Higher Education.



## RECOMMENDATIONS

From the results, the researcher found grounds to for providing the following recommendations:

- The Duhok University administration must continue to attend and run courses and seminars on the scientific conformance in the field of KM and KM processes in order to improve constantly.
- Adoption by the Duhok University administration on the development of creative processes in KM as part of their daily work. This can be achieved through follow-up of new creative opportunities, the evaluation of these opportunities and will lead to the best choice. The administration will provide moral and material support for the pursuit of KM, and a commitment to implement as a basis for competition among workers.
- Working towards building trust between workers to empower them and to enhance joint communication among them by investing their knowledge energies and abilities, and to develop them being the intellectual capital of the university. Success increases success or nothing succeeds like success.
- They should Seek assistance to a design a centralised database between colleges for the storage of knowledge and the sharing of knowledge among the staff.
- There is a need to create an infrastructure of technology to establish an effective connectivity within at the Duhok University.
- Innovative employees should be encouraged and motivated.
- The budget to support KM projects and KM processes should be increased, and a suitable environment should be provided for workers to create a new knowledge and conducting further field studies about the KM processes.
- Work should be deepened and awareness of the application of KM and its process for the administrative leaders and workers at the Duhok University should be increased, and they should be informed them of the experiences and the success of other universities in the world through the application of KM in the administrative field.
- The participation of employees should be encouraged in the strategic planning and take advantage of their expertise in order to determine clear

standards. These standards should then be applied to gain access to the outstanding performance of administration to achieve a competitive advantage.

- Teamwork should be encouraged and the working groups should be formed to collect data, analyse problems and develop appropriate solutions to work on improving administrative procedures.
- The assistance of KM in the application of KM processes in the administration area should be engaged by using a comparison reference with the achievements of similar universities.
- Serving the community by providing suggestions and solving problems they face should be focused. This will lead to an improved effectiveness within the University together with the quality of performance.
- Should be worked in the investment of human resources and the provision of specialised training programs for professional development for administrators and employees of the university.



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In the Name of Allah the Most Gracious, Most Merciful

TuaKisn Rrrusuc OF NoimERN CYTavs  
NEAR EAST UNIVERSITY  
FACULTY OF ECONOMICS AND MANAGEMENT SCIENCES  
INNOVATION & KNOWLEDGE MANAGEMENT DEPARTMENT



## QUESTIONNAIRE

The researcher investigates the role of knowledge management processes in higher education and its application in Duhok University /Iraqi Kurdistan region, as a partial fulfillment of the requirements for the master's degree of Innovation and Knowledge Management Department. Your answers are the most important and have a vital importance in the success of the study. Please read all the articles of the attached questionnaire and choose the answer that reflects the real case. Be sure that the filled information will be dealt with secretly and it will be used for scientific research only. Many thanks to you.

The Researcher

Araz Mohammed Fareeq

arazmahmadan@gmail.com

First: Biographical Information

1. Gender: ☒ male

☐ Female

2. Age: ☐ less than 30 years

☐ From 30-40 years

☐ From 40-50 years

☐ From 50-60 years

☐ More than 60 years

3. Marital Status: ☐ single

☐ Married

4. Scientific Qualification: ☒ PHD

☐ Master

☐ High Diploma

☐ Bachelor

5. Organization Position: ☒ Dean

☐ Vice Dean

☐ Head of Dept.

☐ Faculty Member

☐ Administrative job

6. Work Experience: ☒ less than 5 years

☐ From 5-10 years

☐ From 10-15 years

☐ More than 15 years

7. Workplace (College): ☒ COLLEGE OF ADMINISTRATION AND ECONOMICS

☐ COLLEGE OF BASIC EDUCATION

☐ COLLEGE OF HUMANITY SCIENCES

☐ COLLEGE OF LAW AND POLITICAL SCIENCES

☐ COLLEGE OF PHYSICAL EDUCATION



Second: Knowledge Management:

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Knowledge management refers to information management in regard to our university					
2	The staff tries to make the university as a place of encouraging education and getting new knowledge					
3	The staff right knows that the university has investigated the knowledge balance					
4	The university has a strategic plan to implement knowledge management					
5	The staff has complete information regarding knowledge management					
6	Knowledge management helps to achieve university targets					
7	The university seeks to bring distinctive competencies from outside the university in order to generate new knowledge					

### Third: Knowledge Management Processes:

#### 1- Knowledge Identification

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	The university seeks to identify the knowledge as a basis for all knowledge management processes					
2	The university seeks for searching tacit knowledge					
3	The required tacit knowledge in the university is determined by specialists and experienced experts					

#### 2- Knowledge Auditing

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4	Staff performance is checked according to knowledge common systems					
5	The university makes field visits to evaluate the work performance.					
6	The university has experienced experts in the field of confirming and auditing the tacit and explicit knowledge					



### 3- Knowledge Creation

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7	The university provides a suitable environment for the staff to create the knowledge					
8	The university encourages the scientific dialogue between staff members in order to exchange ideas by conferences and scientific dialogues to generate innovation ideas					
9	The university cares for mother tongue within the educational process to create the new knowledge					
10	The university provides scientific awards for upgrading outstanding researchers					

### 4- Knowledge Sharing

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11	The university tries to provide a supportive atmosphere to exchange the knowledge among the staff					
12	The university provides the opportunity for staff					

	(employees and students) to participate in dialogue in order to exchange ideas					
13	The university has the technology and communication network that help to disseminate the knowledge quickly among the staff					
14	Depending a participation criterion in knowledge as a basis for choosing the outstanding employee					

#### 5- Knowledge Storage

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15	The university has the capability to keep a tacit knowledge and saving it due to the courses, training, and dialogue					
16	The university has interior information network to get a database (archive)					
17	The university provides modern technology for saving knowledge					
18	The university has a system for restoring data and the required information					



#### 6- Knowledge Application

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
19	The university has the capability to convert the knowledge management processes to practical reality					
20	There is a nonstop support from the higher management in the university to apply the knowledge in all organizational processes					
21	The university invests all necessary facilities to apply the knowledge in its management					
22	The university encourages staff participation for taking decision at all management levels					

#### Fourth: Higher Education

N	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	The university administration supports the employees who have innovative ideas in order to grow up the competition in their work field.					
2	The university administration has mechanisms to manage					

	knowledge.					
3	The university administration encourages implementing knowledge management strategy.					
4	The university administration provides a suitable budget to support knowledge management projects.					
5	The university administration provides work policies that support the scientific research and researchers in the context of KM processes.					
6	The university administration attracts qualified staff in various specializations in order to achieve the university's targets.					
7	The university administration is responsible for recognizing and discovering the mistakes and considering them as an educational resource.					
8	The university administration supports employee productivity in the context of KM processes.					
9	The university administration cares employee innovation activities/ideas.					
10	The university administration has a KM culture.					



# Attachments

## Knowledge Identification and Higher Education

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.589a	.347	.344	4.322

a. Predictors: (Constant), Knowledge Identification

b. Dependent Variable: Higher Education

### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	16.186	1.374		11.779	.000
1 Knowledge Identification	1.546	.136	.589	11.365	.000

a. Dependent Variable: Higher Education

## Knowledge Auditing and Higher Education

**Model Summary<sup>a</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.518a	.268	.265	4.576

a. Predictors: (Constant), Knowledge Auditing

b. Dependent Variable: Higher Education

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	18.778	1.378		13.629	.000
1 Knowledge Auditing	1.306	.138	.518	9.438	.000

a. Dependent Variable: Higher Education



## Knowledge Creation and Higher Education

### Model Summary<sup>a</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.631 <sup>s</sup>	.398	.396	4.150

a. Predictors: (Constant), Knowledge Creation

b. Dependent Variable: Higher Education

### Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	14.975	1.329		11.269	.000
1 Knowledge Creation	1.286	.101	.631	12.679	.000

a. Dependent Variable: Higher Education

## Knowledge Sharing and Higher Education

Model Summary<sup>a</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.608a	.370	.367	4.246

a. Predictors: (Constant), Knowledge Sharing

b. Dependent Variable: Higher Education

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	15.338	1.379		11.126	.000
1 Knowledge Sharing	1.249	.105	.608	11.947	.000

a. Dependent Variable: Higher Education



## Knowledge Storage and Higher Education

Model Summary<sup>a</sup>

Model	R	RSquare	Adjusted R Square	Std. Error of the Estimate
1	.598 <sup>a</sup>	.357	.355	4.288

a. Predictors: (Constant), Knowledge Storage

b. Dependent Variable: Higher Education

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.427	1.408		10.956	.000
1 Knowledge Storage	1.226	.105	.598	11.627	.000

a. Dependent Variable: Higher Education

## Knowledge Application and Higher Education

Model Summary<sup>a</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.749a	.561	.559	3.546

a. Predictors: (Constant), Knowledge Application

b. Dependent Variable: Higher Education

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	9.717	1.257		7.732	.000
1 Knowledge Application	1.660	.094	.749	17.610	.000

a. Dependent Variable: Higher Education



## 7 Knowledge Management Process and Higher Education (Total)

Model Summary<sup>a</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751 <sup>a</sup>	.564	.563	3.531

a. Predictors: (Constant), Knowledge Management Process

b. Dependent Variable: Higher Education

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.217	1.386		5.206	.000
1 Knowledge Management Process	.339	.019	.751	17.741	.000

a. Dependent Variable: Higher Education

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ii

KNOWLEDGE MANAGEMENT PROCESSES IN HIGHER EDUCATION A CASE OF DHIK UNIVERSITY-IRAQI KURDISTAN REGION ARAZ MOHAMMED FAREEQ 20145699 HHCOSIA 2016

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