

## إقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Factors Affecting knowledge Sharing and ERP system  
Usage in the Context of ERP Post-Implementation.

العوامل المؤثرة على تبادل المعرفة واستخدام نظم تخطيط موارد المؤسسات  
في سياق مرحلة ما بعد التطبيق.

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التاريخ: 28 أكتوبر 2015

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## **Factors Affecting knowledge Sharing and ERP system Usage in the Context of ERP Post-Implementation.**

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في سياق مرحلة ما بعد التطبيق.

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**Thesis submitted in partial fulfillment of the requirements for the  
Degree of master in Business Administration.**

2015-1436



هاتف داخلي 1150

مكتب نائب الرئيس للبحث العلمي والدراسات العليا

الرقم.....ج س غ/35/Ref

التاريخ 2015/09/20م.....Date

## نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة شئون البحث العلمي والدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحثة/ غدير عبداللطيف حسان أبوصفر لنيل درجة الماجستير في كلية التجارة/ قسم إدارة الأعمال وموضوعها:

العوامل المؤثرة على تبادل المعرفة واستخدام نظم تخطيط موارد المؤسسات في سياق مرحلة ما بعد التطبيق

Factors Affecting Knowledge Sharing And ERP System Usage In The Context Of ERP Post-Implementation

وبعد المناقشة التي تمت اليوم الأحد 06 ذو الحجة 1436هـ، الموافق 20/09/2015م الساعة

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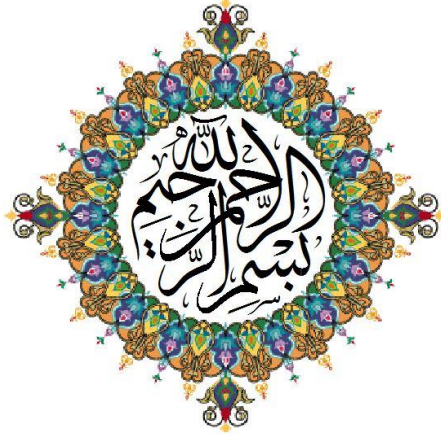
واللجنة إذ تمنحها هذه الدرجة فإنها توصيها بتقوى الله ولزوم طاعته وأن تسخر علمها في خدمة دينها ووطنها.

والله ولي التوفيق ،،،

نائب الرئيس لشئون البحث العلمي والدراسات العليا

أ.د. عبدالرؤف علي المناعمة





﴿ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴾

(سورة البقرة ، آية 33)



# ***Dedication***

*I dedicate this study to...*

*..Palestine, the homeland and the identity..*

*..Martyrs, Life and Freedom..*

*..The soul of my mother..*

*..My Father, for his unlimited encouragement..*

*..My lovely husband for his help and support..*

*..My sweetheart kids Naseem, Sewar, Sara..*

*....My sisters and my brothers..*

Hoping I have made all of them proud of me

**Ghadeer Abusafar**

## ***Acknowledgment***

*First and foremost, I am thankful to Allah for granting me the strength, perseverance and steadfastness to carry on and to accomplish this work.*

*My gratitude is deeply paid to my advisor, Dr. Khalid Dahleez for his generosity, guidance and advice.*

*I would like also to thank Dr. Wasim El-Habil and Dr. Snaa Elsaiegh for accepting to discuss this research.*

*I would like to thank European Gaza Hospital administration, especially Eng. Majed Tabash in information technology department for helping in distributing the questionnaires to the staff.*

*Once again, I would like to thank all who helped and supported me through this study.*

*Finally, I am proud to be one of the Islamic University students.*



## ***ABSTRACT***

Recently, many organizations utilized Enterprise Resource Planning (ERP) systems to weave together all the data within an organization business processes and integrate information within and across functional areas. Although many organizations introduce ERP system, a lot of them failed in meeting the anticipated business goals. From this point, it is imperative to find ways to facilitate the usage of ERP systems for organizations.

The aim of this research is to investigate the factors affecting employees' knowledge sharing and ERP usage in post implementation stage. The descriptive analytical method was followed in conducting the research. And the research was applied on the departments of the European Gaza Hospital. The targeted population was all the staff members who used this system. Data were collected using questionnaire, 265 questionnaires were distributed upon staff members, 235 of them were returned with a response rate of 89%.

Results from this study shed light on the role of driver factors in facilitating knowledge sharing and ERP system usage. It found that social capital, IT Support and self-efficacy have significant impacts on knowledge sharing. However, contrary to common belief, there is insignificant effect of intrinsic motivation, Supervisory feedback and support on knowledge sharing. On the other hand, Social Capital, Self-efficacy, Supervisory Feedback and Support and Intrinsic motivation variables have significant impact on ERP usage, while IT Support has a non-significant effect on ERP Usage.

The recommendations drawn include, first, improving training processes to increase the employee's efficacy; second, it is recommend to provide staff with information technology facilities to overcome the complexity of knowledge; third, it is recommended to build a social network between the employees, which thereby enables them to have more opportunities to communicate and be more willing to share knowledge with others.

## ملخص الدراسة

العديد من المنظمات حاليا تستخدم أنظمة تخطيط موارد المؤسسات (ERP) لنسج جميع البيانات في العمليات التجارية للمنظمة ودمج المعلومات داخل وعبر المجالات الوظيفية. على الرغم من أن العديد منها أدخلت نظام تخطيط موارد المؤسسات ERP، هناك الكثير منها فاشلة في تحقيق أهداف العمل المتوقعة. من هذه النقطة، لا بد من إيجاد سبل لتسهيل استخدام نظام (ERP) للمؤسسات.

الهدف من هذا البحث هو دراسة بعض العوامل التي تؤثر على تبادل المعرفة وعلى استخدام نظام ERP لدى الموظفين في مرحلة ما بعد التنفيذ. استخدمت الباحثة منهج التحليل الوصفي، حيث تم تطبيق الدراسة على أقسام مستشفى غزة الأوروبي. و تمثل مجتمع الدراسة بجميع الموظفين الذين يستخدمون هذا النظام. حيث تم جمع البيانات باستخدام أداة البحث الاستبيان، التي وزعت على 265 موظف، وعاد منها 235 بمعدل استجابة 89%.

تسلط نتائج هذه الدراسة الضوء على دور هذه العوامل في تسهيل استخدام نظام تخطيط موارد المؤسسات. حيث أن رأس المال الاجتماعي، ودعم تكنولوجيا المعلومات والكفاءة الذاتية كلها لديها تأثيرات على تبادل المعرفة. ومع ذلك، خلافا للاعتقاد الشائع بأن هناك تأثير من الدوافع الذاتية، والتغذية الراجعة ودعم المشرف على تبادل المعرفة. من جهة أخرى وجدت أن رأس المال الاجتماعي، الدوافع الذاتية، والتغذية الراجعة ودعم المشرف، والكفاءة الذاتية لها تأثير على استخدام نظام ERP ولم يكن هناك أي تأثير لدعم تكنولوجيا المعلومات.

خلصت الدراسة إلى عدد من التوصيات تشمل تحسين عمليات التدريب لزيادة كفاءة الموظف بالإضافة إلى تزويد الموظفين بمرافق تكنولوجيا المعلومات للتغلب على تعقيد المعرفة، ومن المستحسن أيضا بناء شبكة اجتماعية بين الموظفين لتمكينهم من الحصول على مزيد من الفرص للتواصل وتكون أكثر استعدادا لتبادل المعارف مع الآخرين.



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# **Chapter One: Introduction**

## **1.1 Introduction**

As business environments have become highly competitive, the need for organizations to collect and analyze data in an integrated way and in real-time has become very critical. By integrating all organizational processes and utilizing single-entry data recording and tracking, Enterprise Resource Planning (ERP) systems have the potential capability to provide multiple users with rapid information.

ERP systems have been strongly improved competitiveness through increasing productivity, reducing costs, improving decision quality and resource control (Shu-Yi Huang, 2000). ERP systems are business applications that weave together all the data within an organization business processes and associated functional areas. By integrating these functional areas within the business organization, ERP solutions allow an enterprise to establish one (logical) database, one integrated application and one common graphical user interface for managing all its information and transactions (Malhotra & Temponi, 2010).

Although many companies introduced an ERP system, recent studies reported that more than 50% of firms fail to implement fully, others, even worse, experience failure in implementing ERP systems (Hung, Ho, Jou, & Kung, 2012). A significant amount of ERP research has focused on identifying critical success factors (CSFs) associated with ERP system implementation. However, relatively little research has during continuing usage (Grabski, Leech, & Schmidt, 2011). After ERP implementation, ERP system usage is a necessity for daily operations in many organizations.

Meanwhile, competing in the age of knowledge economics, more and more business organizations are coming to view knowledge as their most strategic resource. Whereas Knowledge management processes include many activities, such as knowledge creation, knowledge storage, knowledge sharing and knowledge application.

Knowledge sharing can be considered as the most important activity of them. Because the objective of KM is to make the knowledge assets be reused and transferred, moreover creating advanced organization value.

Knowledge sharing refers to the process by which individuals mutually exchange their knowledge and create new knowledge jointly (van den Hooff & de Ridder, 2004). In addition, Knowledge sharing among employees may be helpful in enabling and encouraging employees to use ERP systems because employees prefer to ask colleagues for help when facing obstacles in using an ERP system (Nah & Delgado, 2006).

## **1.2 Problem Statement and Research Question**

Nowadays ERP systems and knowledge sharing activities have considered as important variables for organizations. Whereas ERP systems are the main information infrastructure of an organization. And knowledge sharing activities are the major component of knowledge management process. Both of these two organizational variables are consistent and they are adopted to gain the superior competitive advantage for organizations. After the establishment of the European Gaza Hospital, this system was implemented and called the Health Care System. Although this system was implemented in the early years of the establishment, there is a little research about the system and the critical factors affected on the implementation. According to Dwak(2011), there is a significant effect of utilized health information system in the Gaza European Hospital on the medical and administrative areas such as the preparation of statistical reports related to the work, the transfer of laboratory results between different sections, and to facilitate access to medical record and return it at any time and also facilitates communication and coordination process between the internal department of the hospital. Although many organizations introduced an ERP system, there is a lot of them fail to implement fully, and to meet anticipated business goals. This is raise an important issue of why, after an ERP system has been implemented, the ERP system cannot gain the anticipated benefits (Hung, Ho, Jou, & Kung, 2012; Jeng & Dunk, 2013). Eng Majed Tabash –The manager of IT department in European Gaza hospital- indicates that the anticipated goals of usage the system not achieved completely, and relatively little research has appeared that focuses on ERP usage.

Therefore, this study aims at:

**Examining the impact of selected antecedents on knowledge sharing and ERP system usage in the context of ERP post-implementation.**

To achieve the research purpose, this work aims to answer the following research questions:

- How does knowledge sharing among users occur in the ERP post-implementation phase?
- How does self-efficacy, adapted from social cognitive theory, contribute to knowledge sharing and ERP usage?
- How does social capital, in the forms of social network ties enables knowledge sharing and ERP usage in the context of ERP post-implementation?
- How does intrinsic motivation effect on employees' knowledge sharing and ERP usage after ERP implementation?
- How does feedback quality effect on knowledge sharing and ERP usage after ERP implementation?
- How does IT Support influence on knowledge sharing and ERP usage after ERP implementation?

This study integrates these different perspectives outlined above to provide a richer model to better examine the formation process of knowledge sharing and the effect on ERP system usage.

### **1.3 Hypothesis**

To study the influential antecedents of knowledge sharing and ERP usage ,the following hypotheses were constructed:

*H<sub>1</sub>*. There is a significant effect of success factors on knowledge sharing

*H<sub>1a)</sub> Feedback quality has a significant effect on knowledge sharing.*

*H<sub>1b)</sub> Self-Efficacy has a significant effect on knowledge sharing .*

*H<sub>1c)</sub> Intrinsic motivation has a significant effect on knowledge sharing .*

*H<sub>1d)</sub> Social capital has a significant effect on knowledge sharing .*

*H<sub>1e)</sub> IT Support has a significant effect on knowledge sharing .*

*H<sub>2</sub>* .There is a significant effect of success factors on ERP usage .

*H<sub>2a)</sub> Feedback quality has a significant effect on ERP usage.*

*H<sub>2b)</sub> Self- Efficacy has a significant effect on ERP usage.*

*H<sub>2c)</sub> Intrinsic motivation has a significant effect on ERP usage.*

*H<sub>2d)</sub> Social capital has a significant effect on ERP usage .*

*H<sub>2e)</sub> IT Support has a significant effect on ERP usage.*

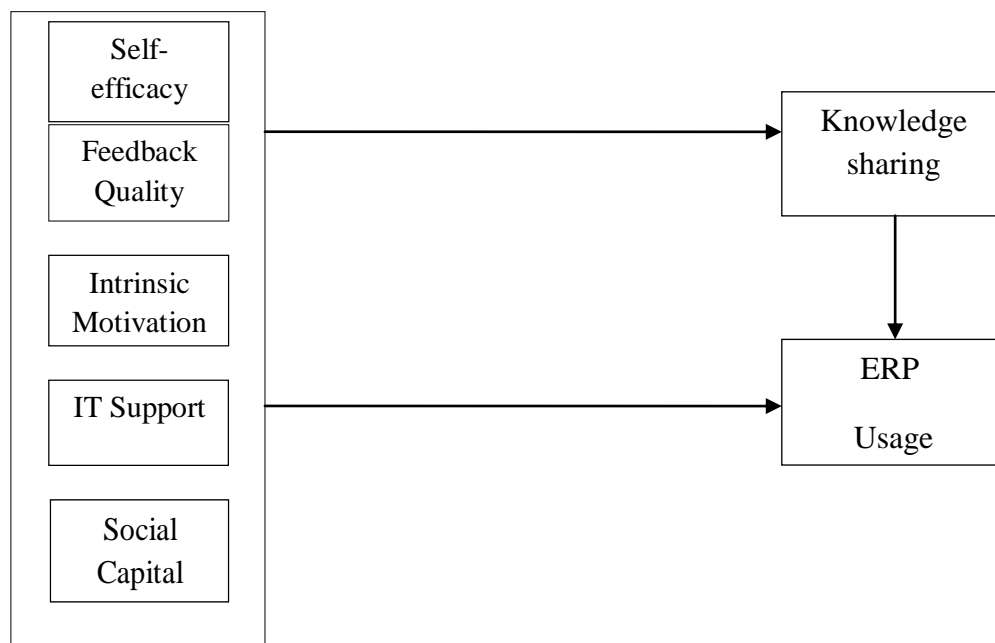
*H<sub>3</sub>* .There is a significant relationship between knowledge sharing and ERP Usage.

*H<sub>4</sub>*.There are significant differences among respondents toward "the antecedents of knowledge sharing and ERP usage in European Gaza Hospital in Gaza strip in Palestine" due to personal traits which are: gender, age, educational degree, social status, place of residence, current position, years of experience in current position, beneficiaries of services.

#### 1.4 Variables & Conceptual Framework

Figure 1.1 shows the variables of this study and the relationships between them. There are two dependent variables which are knowledge sharing and ERP usage .And there are five independent variables Social Capital, Self-efficacy, Supervisory Feedback and Support, Intrinsic motivation, and it support.

Factors affected on KM & ERP



**Figure (1.1) Conceptual Map-developed by researcher-based on (chou, et al, 2014)**

**The researcher defined these variables as:**

**-Knowledge Sharing** is defined as a process where individuals mutually exchange their knowledge between them and thereby creating new knowledge.

**-ERP Usage** is a critical predictor of information system implementation success and a measure of how users use the ERP system.

**-Supervisory Feedback and Support**

Supervisory support is a key resource that motivates employees to be engaged in their workplace, and supervisory feedback was defined as employees' perception that they are receiving clear information about their performance outcome and suggestions for improvement.

**-Self-efficacy** is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives.

**-Intrinsic Motivation** refers to behavior that is driven by internal rewards.

**-IT support** is also known as technical support and it is basically the process of providing assistance with technology related products such as computers, televisions, digital video recorders, and even cell phones.

**-Social Capital is defined** as the ability of actors to build success social networks.

## **1.5 Research Objectives:**

The study's main objective is to investigate the effect of selected antecedents on knowledge sharing and ERP usage in post implementation of ERP system in European Gaza Hospital in Gaza Strip. Specifically, the study aims at achieving the following objectives:

1. Examine how to facilitate the usage of ERP systems for organizations.
2. Examine the effect of selected antecedents on knowledge sharing.
3. Examine the effect of selected antecedents on ERP usage.
4. Provide recommendations on how to facilitate knowledge sharing and enhance ERP system usage.



## 1.6 Significance of the Study

Scientific Importance: This study is considered as an important reference for those interested and involved in the areas of research, since this study focuses on computerized health information system.

Practical importance: This study helped decision-makers and those in charge of the Ministry of Health to identify the strengths and weaknesses regarding to the computerized health systems and knowledge sharing to work on policies to develop these systems and improve the knowledge sharing of employees to facilitate the use of information systems (ERP).

Importance to the community: The use of sophisticated computerized health systems (ERP system) in hospitals will improve the functionality of the level of their employees, and that will impact positively on the local community and increase the level of quality of health services provided.

## 1.7 European Gaza Hospital

Refereed to the website of Ministry of Health (<http://www.moh.gov.ps/>), the hospital began as a project of the European Union granted to Palestinian people at the end of the first Intifada in 1989. In this period, there was no foundation to any legitimate authority. So, UNRWA has been assigned to work on the establishment of the hospital by European fund. Work began on the establishment of the hospital in 1993 and allocated funding ended in 1996.

And since the arrival of the Palestinian Authority as the legitimate authority in the country, the dialogue began with the UNRWA and the European Union for the transfer of ownership of the hospital to the Ministry of Health. This dialogue resulted in the signing of a memorandum of understanding in the month of October 1997, which states for the transfer of ownership of the hospital to the Ministry of Health in October 2000.

The Ministry of Health developed a general plan for the hospital to be:

1. **Transformative Hospital:** Special cases were sent to it from the southern region and from all provinces of Gaza.
2. **A teaching hospital:** Which facilitate the clinical part of medical education programs of the Faculty of Medicine?

3. **A leading hospital:** in administrative systems that will be applied in the others hospitals in case of success.

The hospital faced great difficulties because of the events in the intifada period which caused a delay in the arrival of the hardware and some reversal competencies for attendance. Despite these difficulties, the hospital began to implement the scheme as planned on the medical, administrative and educational level.

## **1.8 Structure of the thesis:**

The study consists of six chapters. In Chapter one, a brief description of European Gaza Hospital in Gaza strip. It also includes a statement of the problem, research hypothesis, objectives, and importance of the study and structure of the thesis. The following chapter is two which includes a brief discussion of relevant area in Knowledge management, Knowledge Sharing, ERP system Usage and Research model which often includes (Supervisory Feedback &Support, Social Capital, Self-Efficacy, Intrinsic Motivation and IT Support) .The next is Chapter three which presents relevant studies and research papers in the fields of ERP system, Knowledge Sharing, Social Capital, Supervisory Feedback& Support, Self-Efficacy, Intrinsic Motivation and IT Support. Chapter four includes research design, Study population and sample, the instrument questionnaire, piloting, data collection, data entry and analysis. And Chapter five includes percentages, significance and correlation tables relating to questionnaire's data, study constructs and hypotheses. The last one is chapter 6which includes conclusions and the recommendations of the study.

**Chapter 2**  
**Literature Review &**  
**Research Model**

## **2. Introduction**

This chapter provides a review of Enterprise Resource Planning (ERP) system and knowledge management definitions, benefits of ERP and usage, importance of knowledge management and knowledge sharing, antecedents supporting knowledge sharing and ERP usage, and the role of knowledge sharing in facilitating ERP system usage. In this chapter, the research model was developed and the research hypotheses were proposed. Throughout this chapter an extensive review of the literature and arguments presented to provide the reader with a comprehensive view of the topic.

### **2.1 ERP systems**

The rapid changes in information technology lead changes in business environments. As business environments need to have competitive advantage, the need for a system to integrate all organizational processes and utilizing single-entry data recording and tracking, Enterprise Resource Planning (ERP) systems have the potential capability to provide multiple users in real-time (Huang, 2004).

There are many definitions of ERP in the extant literature. ERP was defined as an information system that can integrate information and information-based processes within and across functional areas in an organization (Kumar & Van Hillegersberg, 2000). Similarly, ERP was defined as business applications that weave together all the data within organizations business processes and associated functional areas. By integrating these functional areas within the business organization, ERP solutions allow an enterprise to establish one (logical) database, one integrated application and one common graphical user interface for managing all its information and transactions (Candra.s, 2012).

In similar vein, Rubina .et.al (2011) defined ERP systems as integrated, holistic, enterprise-wide business management systems that provide constant information across and within different business functions. Moreover, an ERP system enables efficient and effective communication and collaboration between the enterprise and its suppliers, as well as the enterprise and its clients. Thus, ERP is a set of compatible activities designed to share and process information between diverse departments in organization. The ERP automates business processes and collects transactional business information.

On the other hand, Poba-Nzaou et al. (2008), Shang and Seddon (2002) defined the factors influencing the acceptance of ERP systems were categorized into four identified categories: First, strategic acceptance factors refers to how an ERP system should promote and fit into an enterprise's long term vision, goals, and business plans in order to achieve enhanced decision-making and sustainability of the enterprise. The second category deals with factors that relate to how an ERP system can be used to manage the day-to-day operations of the enterprises and how an ERP system can support business processes.

The business acceptance factors identified in the different resources to advancing business operations, improving operational efficiencies, following best business practices, cost savings, and to support analytically-aided decision making. Third, technical acceptance factors that refer to how ERP systems are understood to operate in terms of integration and expected performance. The technical acceptance factors identified in the different resources analyzed to the provision of business functionality, to integration of business functionality, access to business functionality and timely implementation periods. Last one, Human acceptance factors refer to nonfunctional aspects of ERP systems that are important factors that impact on end-user satisfaction with using ERP systems. User experience and training are two important human acceptance factors identified in literature (Rubina .a .et,al, 2011)

## **2.2 ERP system usage:**

After ERP implementation, ERP system usage is a necessity for daily operations in many organizations. If users could operate the ERP system smoothly, the organization would get the anticipated benefits (Chou.h et al, 2014). ERP system usage is a measure of how users apply and use the features of an ERP system (Nwankpa & Roumani, 2014b). ERP usage also be can viewed as a measure of how end-users accept and embrace the technology (Nwankpa.J, 2015). System usage has been found to be a critical predictor of information system implementation success and thus for complex systems such as ERP systems, usage behavior needs to be deep and sophisticated for companies to realize inherent benefits (Nwankpa & Roumani, 2014a). Typically, the higher the system usage by the end-user, the better the chances of firms' achieving ERP implementation goals and objectives (Nwankpa.J, 2015).

ERP usage appears as an important success measure in the ERP post-implementation phase (Lorenzo, 2001). There are several studies which indicate that information system usage has been proposed as a measure of the success of an information system. For instance, Lippert and Forman (2005) indicated that the information system usage construct provides a measure of post-implementation behaviors.

Thus, ERP system usage is an important measure for ERP system success after ERP implementation. IT can be used by individuals in a work context to perform a number of relevant functions, e.g., to facilitate problem-solving/decision-making, and customer service (Doll & Torkzadeh, 1998).

On the other hand, ERP usage problems can undercut the potential benefit expected from the system and can also undermine users' ability to understand and adopt new business processes embedded within the ERP package. Usage problems have been attributed to inadequate training, insufficient support for end-users and severity of the implementation choice (Nwankpa & Roumani, 2014). These problems are capable of discouraging users from continually using the system or in some cases can force users to initiate workarounds that may continue indefinitely, thus limiting the systems use (Nwankpa, J., 2015).

Zuboff (1988) identified two functional roles of IT in organizations: automating and informing. According to (Lorenzo, 2001), ERP system usage includes automating and informing. Automating refers to using ERP systems to automate business processes, allowing these processes to be performed with greater uniformity and control. This is the fundamental function of an ERP system and has been thoroughly utilized to date, so that these processes can be performed with more continuity, uniformity and control (Chou .h et al, 2014).

With respect to the second role of an ERP system, the informing role can be defined as the use of ERP systems to generate information about the processes by which an organization performs its work (Lorenzo, 2001). Because an ERP system is typically a transaction automation system, the automating role is the fundamental function as well as one of the first benefits experienced when an ERP system is implemented, while usage in informing is often not being carried out completely (Chou .H, Chang .H, Lin .Y, Chou .S., 2014). Jasperson et al. (2005) indicated that companies need to persuade and enable users' usage of ERP systems if they are to maximize ERP benefits after ERP

implementation. Informing functions translate descriptions and measurements of activities, events and objects into data and enables ERP systems to be used for solving problems and justifying decisions (decision support), for coordinating activities among different business areas and among superiors and subordinates (work integration), and for servicing both internal and external customers (customer service) (Lorenzo, 2001). Additionally, the computer allows personnel to make decision-making more explicit, and augments and creative judgment in problem solving by providing access to models and data bases.

Decision rationalization includes both explaining decisions and improving the decision process. And IT can be used to create value for customers by improving customer service. For example, providing query responses, reports, statistical analysis, and multidimensional analysis to support decision making (Davenport, 2000).

Work integration refers to the use of ERP systems to plan one's own work, to monitor performance, and to coordinate work activities with others in organizations as well as with superiors and subordinates (Doll & Torkzadeh, 1998; Lorenzo, 2001). As an illustration, when sharing information, the sales forecast and production plan can be viewed through ERP systems simultaneously by everyone in need of this information (e.g., account managers, customer service, and manufacturing), enabling employees to coordinate their work activities (Chou.h et al, 2014).

Moreover, ERP systems facilitate work integration in many aspects. Whereas work integration includes both the vertical and horizontal integration of job tasks. IT shapes the extent of the division of labor within the flow of work (horizontal) and between the managers and the managed (vertical). IT facilitates communication among the members of a work group, enabling the organization to utilize the specialized expertise of a number of individuals. The level of vertical integration is determined by the degree to which IT is used by workers to plan their own work, monitor their own activity, and communicate vertically (Dolla, Torkzadeh, 1998).

Customer service means that ERP systems can be used to service internal and external customers (Lorenzo, 2001). As an illustration, by linking the ordering and production systems, a sales representative is able to promise firm delivery dates, an ability which then translates into improved service levels (Chou .H, Chang .H, Lin .Y, Chou .S., 2014).



Although many companies introduced an ERP system, recent studies reported that more than 50% of firms fail to implement fully, others, even worse, experience failure in implementing ERP systems (Hung, Ho, Jou, & Kung, 2012; Jeng & Dunk, 2013). While ERP systems have become the typical information system in many companies (Yoon, 2009), there are introduction and failure of an ERP system to meet anticipated business goals. This is raise an important issue of why, after an ERP system has been implemented, the ERP system cannot successfully bring the potential benefits(Grabski, Leech, & Sangster, 2009) .

A significant amount of ERP research has focused on identifying critical success factors (CSFs) associated with ERP system implementation (Grabski, Leech, & Schmidt, 2011). However, relatively little research has appeared that focuses on the effort with respect to ERP in the post-implementation period and during continuing usage (Muscatello & Parente, 2008). After ERP implementation, ERP system usage is a necessity for daily operations in the organization to gain anticipated goals (Chou.H et al., 2014).

### **2.3 Benefits of ERP**

ERP systems are supposed to promote efficiency and eliminate non-value-added activities, hence to gain the competitive advantages. The other benefits of ERP systems are its complete integration to all the business processes, reduction in the volume of data entry, upgradability of the technology, portability to other systems, adaptability, and applying best practices (Rajan and Baral,2015).

Thus, Organizations invest in ERP systems to achieve important benefits. These benefits may come in the form of improved business productivity such as shortened lead time, lower cost and efficiency communication among functional boundaries (Nwankpa & Roumani, 2014). In fact, ERP benefits can vary across industries and in many cases may depend on the implementing firms (Davenport, 2000). Yet these expected benefits are not always visible for ERP implementing companies (Nwankpa.J, 2015).

Gattiker and Goodhue (2000) indicate that there are many studies refer to ERP benefits which can be grouped into four categories.

First, Many organizations establish ERP systems to improve the flow of information across subunits (Davenport, 1998). Goodhue et al. (1992) point out that standardization and integration facilitate communications and better coordination. Data standards

eliminate the burden of reconciling or translating information that is inconsistently defined across the subunits (Huber, 1982), they do away with the potential for translation errors and ambiguity about a field's true meaning (Sheth and Larson, 1990). Second, the process standardization and integration across organizational units makes administrative activities centralized, like account payable and payroll. This may allow administrative savings (Davenport, 1998).

Third, ERP may be an instrument to move a firm away from inefficient business processes and toward accepted best practice business process (Cooke and Peterson, 1998). Additionally, Shang and Seddon (2002) developed five dimensions of ERP benefits namely, operational, managerial, strategic, IT infrastructure and organizational as indicated in Table (2.1). Shari Shang, Peter B Seddon, "Assessing and managing the benefits of enterprise systems: the business manager's perspective," *Info Systems Journal*, 12, 2002, pp. 271-299.

**Table (2.1) ERP benefits framework (Shang & Seddon, "Assessing and managing the benefits of enterprise systems: the business manager's perspective", 2002)**

<b>Dimensions</b>	<b>Sub dimensions</b>
1. Operational	1.1 Cost reduction 1.2 Cycle time reduction 1.3 Productivity improvement 1.4 Quality improvement 1.5 Customer service improvement
2. Managerial	2.1 Better resource management 2.2 Improved decision making and planning 2.3 Performance improvement
3. Strategic	3.1 Support for business growth 3.2 Support for business alliance 3.3 Building business innovations 3.4 Building cost leadership 3.5 Generating product differentiation 3.6 Building external linkages 3.7 Enabling e-commerce 3.8 Generating or sustaining competitiveness
4. IT infrastructure	4.1 Building business flexibility for current and future changes 4.2 IT cost reduction 4.3 Increased IT infrastructure capability
5. Organizational	5.1 Changing work patterns 5.2 Facilitating organizational learning 5.3 Empowerment 5.4 Building common vision 5.5 Shifting work focus 5.6 Increased employee morale and satisfaction

Shang and Seddon (2002) concluded that ERP benefit was a continuous process with benefits realized at different rate in different core processes. Similarly, Gattiker and Goodhue (2005) found that over all ERP benefit was mediated by intermediate benefits and that realizing intermediate benefits was a precondition to achieving overall ERP benefit. In a similar vein Chou and Chang (2008) reaffirmed the role of intermediate benefits as predictor of overall ERP benefit but also found that customization and organizational mechanisms were strong predictors of ERP benefits.

## **2.4 History and definition of knowledge management**

knowledge management has deep roots as the concept of knowledge and workers was first introduced by Peter Drucker. However, it was Karl Wiig who pioneered the term knowledge management in 1986 during a United Nation's speech and introduced an in depth Knowledge management practices (Wiig, 1993).

Karl Wiig (1993) continued his research by examining the basis for knowledge management; how individuals and companies produce, symbolize, and employ knowledge; and particular methods and pragmatic approaches to the management of knowledge (Holsapple, 2003). In the twenty-first century, Knowledge management has risen from practitioner and consultancy knowledge and has only recently become a subject for academic study. Today, knowledge management can be confused with information systems by some commentators and human resource management by others. In reality, it has roots in a wide variety of disciplines such as philosophy, business management, anthropology, information science, psychology and computer science (Jashapara, 2004).

Many knowledge management definitions exist. The following definitions will be selected. According to Malhotra (2000), KM embodies organizational processes that seek synergetic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings". Malhotra (2000) also mentions that KM requires re-consideration of everything in the organization and caters to the critical issues of organizational adaptation, survival and competence in the face of increasing discontinuous environmental change. It has been argued that the effectiveness of KM depends on how the generation of Gloet and Terziovski (2004) describe knowledge management as the formalization of and access

to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value.

The authors also describe knowledge management as an umbrella term for a variety of interlocking terms, such as knowledge creation, knowledge valuation and metrics, knowledge mapping and indexing, knowledge transport, storage and distribution and knowledge sharing (Plessis, 2007).

Knowledge management has been also defined as the "effective learning processes associated with exploration, exploitation and sharing of human knowledge (tacit and explicit) that use appropriate technology and cultural environments to enhance an organization's intellectual capital and performance" (Jashapara, 2004 p. 12). But Xerox corporation illustrates "knowledge management is the discipline of creating a thriving work and learning environment that fosters the continuous creation, aggregation, use and re-use of both organizational and personal knowledge in the pursuit of new business value" (Cross, 1998, p.11).

Keeping all of these in mind, it is possible to compose a more process-oriented definition of KM such as knowledge management involved with the exploration and exploitation of existing knowledge in order to create new knowledge by systematic management of all activities and processes referred to generation and development, codification and storage, transferring and sharing, and utilization of knowledge for an organization's competitive edge.

## **2.5 Knowledge management**

Managing knowledge efficiently and effectively is considered a basic competence for organizations to survive in the long time. Knowledge is one of the most valuable assets of business and an important competitive factor. So, the recent interest in organizational knowledge has prompted the issue of managing the knowledge to organization's benefit. It evolves continuously as the individual and the organizations adapt to influences from external and the internal environment. Hence, leveraging knowledge resources effectively and efficiently is vital in order to gain a competitive advantage and to ensure the sustainable development for societies, as well as for the organizations (Nonaka, 1998; Davenport and Prusak, 1998; Storey and Barnett, 2000). Knowledge

management refers to identifying and leveraging the collective knowledge in an organization to help the organization compete (Von Krogh, 1998).

Knowledge management has become an emerging discipline that has gained enormous popularity among academics, consultants, practitioners organizational practice. It has been argued that it is no longer the traditional industrial technologies or craft skills that drive competitive performance but instead knowledge that has become the key asset to drive organizational survival and success (Jashapara, 2004).

Knowledge management includes the process of capturing, storing, sharing, and using knowledge. Scholars regard knowledge sharing as a critical process of knowledge management (Zhang, Ordonez de Pablos, & Zhou, 2013). Van.H and Ridder (2004) are defined knowledge sharing as the process by which individuals mutually exchange their knowledge and create new knowledge jointly.

The major objective of KM is to make the knowledge assets be reused and transferred, moreover creating advanced organization value. And the importance of knowledge sharing is due to knowledge is different from other assets. The value of knowledge won't reduce through sharing it, but the synergy will be generated instead (Huang, 2004)

## **2.6 Hierarchy of Knowledge**

### **2.6.1 Data:**

The dictionary definition of data is known facts or things used as a basis of inference or reckoning. Another is: facts given from which others may be inferred (Jashapara, 2004).

### **2.6.2 Information:**

The dictionary definition of information is "Something told "or " the act of informing or telling". However this doesn't help us distinguish between data and information. Information could be considered as systematically organized data (Meadows, 2001). The notion of systematic implies the ability to predict inferences from the data (Jashapara, 2004, p.15).

### **2.6.3 Knowledge:**

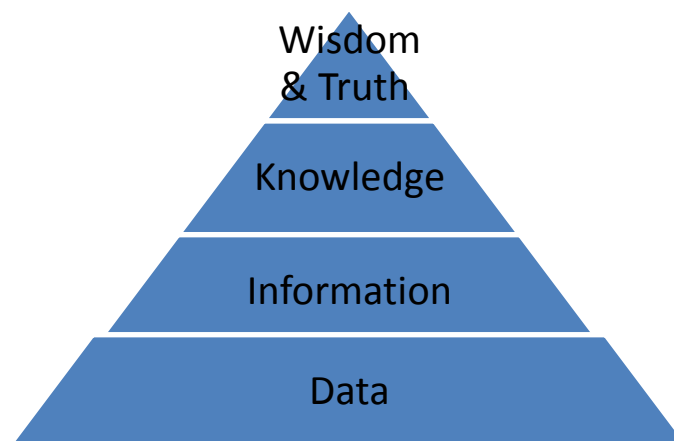
In a practical sense knowledge could be considered as actionable information. This allows us to make better decisions and provide an effective input to dialogue and

creativity in organizations. This occurs by providing information at the right place, at the right time and in the appropriate format (Tiwana, 2000). Knowledge allows us to act more effectively than information or data and equips us with a greater ability to predict future outcomes (Jashapara, 2004, p.16).

Knowledge is one of fundamental importance for organizations of any size and industry (Martin 2000, 17). Even if knowledge is not the sole element for an organization's survival, it is the most important one because it supports all others (Rastogi, 2002). For this reason, it is not surprising that business and academic communities are very deeply involved in understanding knowledge, and developing knowledge management processes and systems to exploit opportunities that knowledge offers to organizations.

#### **2.6.4 Wisdom and Truth**

Wisdom and truth have been shown to have higher qualities than knowledge in the hierarchy of figure (2.1). These terms are even more elusive than knowledge. Wisdom is the ability to act critically or practically in a given situation. It is based on ethical judgment related to an individual belief system. Wisdom is often captured in famous quotes, proverbs and sayings (Jashapara, 2004, p.18).



**Figure 2.1: Hierarchy of knowledge**

**Source ( Jashapara, 2004, p.17).**

## **2.7 Types of Knowledge**

Knowledge can be categorized into explicit and implicit (tacit) categories (Polanyi 1966). It is much easier to use formal language to transmit explicit knowledge than to convey tacit knowledge, which is often viewed as being specific to an individual.

### **2.7.1 Tacit knowledge**

Tacit knowledge has a variety of definitions: practical expertise, hard to explain (Teece, 1998), intangible information residing within individuals demonstrated by actions and includes personal beliefs, perspectives, and values, conveyed only by watching and doing, innately understood and used (Zack, 1999), embedded in specific actions, skills, and activities (Nonaka, 1994). Argote and Ingram (2000) observe that a significant component of organizational (especially tacit) knowledge is embedded in individual members, and that knowledge can be embedded in various social networks. Consequently, separating, warehousing and distributing the entire knowledge within a human cannot be done (Davenport and Donald, 1999).

### **2.7.2 Explicit knowledge**

Nonaka and Takeuchi (1995) note that explicit knowledge is available in the form of files, library collections, or databases, whereas some types of implicit knowledge (which also serve as an organization's knowledge capital) are either difficult or impossible to access. Explicit knowledge is based on broad research and is considered more tangible but based in tacit knowledge that has been codified, distributed, and evidenced by verbal statements, mathematics, specifications, and operational manuals which can be characterized as data, contained in language or coding knowledge previously warehoused, clearly articulated (Zack, 1999), clarified, coded, and distributed using symbols or common language (Alavi and Leidner, 2001).

The explicit dimension of knowledge is articulated, codified and communicated in symbolic form and/or natural language (Candra.s ,2012). Explicit knowledge is easily articulated or reduced to writing, is often impersonal and formal in nature, and frequently takes the form of documents, reports, white papers, catalogues, presentations, patents, formulas, etc. (Nonaka and Konno, 1998). In contrast, tacit knowledge (e.g. abilities, developed skills, experience, undocumented processes, etc.) is highly personal and difficult to reduce to writing. Tacit knowledge is rooted in an individual's

experience and values (Nonaka and Konno, 1998). This type of knowledge may play an important role in the strategic planning performance of managers and professional staff (Bennett, 1998).

The two knowledge forms are interlinked and holistically represent organizational resources and assets as tacit knowledge is the basis for identifying, acquiring, interpreting, and distributing explicit knowledge (Fahey and Prusak, 1998). This formulation allows us to understand knowledge as an individual and group phenomenon that is intimately linked with action as past experiences influence and present activities. Also it transcends the linear hierarchical division between data, information and knowledge as it defines them as components of a loop – data that become information after evaluation and translation by knowledge, that will become data when transferred (here we take in consideration just explicit knowledge that can be expressed in “hard” form).

### **2.7.3 Fundamental Elements of Knowledge Management**

The literature identifies the essential ingredients of knowledge management as people, processes and IT. People are a foundation element as they are responsible for actually creating, sharing and applying knowledge within the organization. The processes associated with knowledge management serve to obtain, create, organize, and distribute knowledge. And the IT or technology segment warehouses and makes the knowledge available to users. Each element discussed below is dependent upon the other for effectiveness (Fong and Cao, 2004).

#### **2.7.3.1 People:**

According to Churchman (1972), knowledge resides in the user and not in the collection of data; therefore an organization needs to focus its knowledge management effort not on data, but on its people. This task is even more difficult if we consider that people are not only the key enablers in creating and using knowledge for competitive advantage, but they are also the major constraints.

People are responsible for selecting others to share with, deciding the topic, choosing the method, and finally utilizing the knowledge. So, the ultimate success of any knowledge management program rests on the individual’s acceptance and willingness to share with others. Sharing knowledge can create a positive environment of reciprocity



where the giver can anticipate receiving equal knowledge in the future, gain respect as an expert and personal fulfillment and satisfaction (Davenport and Prusak, 1998). However, obstacles to sharing may include a fear of collaborating with the wrong people and simply being used without recognition or reward.

The literature review focused attention on three different attributes of people as carriers of organizational human capital: (1) Leadership as a capability to develop a clear vision of the present and future organization's needs for knowledge and being able to motivate people to learn and innovate. (2) Adaptability as a capability of people to be aware of changes in the outside world and to be prepared and competent to deal with them. (3) Networking as a capability of people to build and sustain a social network of colleagues and professional acquaintances that supports knowledge creation and sharing Churchman (1972).

The foundation for establishing a knowledge sharing culture is trust at both the personal and organizational levels coupled with an environment that encourages and compensates sharing while rejecting and even punishing non participants (Empson, 2000).

### **2.7.3.2 Processes:**

Uncovering, obtaining, interpreting, organizing, and sharing knowledge with the right parties, then motivating people to utilize it is a continuous journey (Fong and Cao, 2004). Nonaka and Takeuchi (1995) feel knowledge and its management is dynamic and a constant process of accumulation and exploitation of undiscovered knowledge.

New knowledge that is created in the knowledge creation process needs to be store for later used as an organizational memory. The processes of knowledge storage involves finding ways to convert documents, models, human insights and other arte facts into forms that make retrieval and transfer easy without losing the “true meaning” of the knowledge (Staples et al. 2001).

Knowledge transfer occurs at various levels of an organization, for example between individuals, between individuals and groups, between groups, between groups and an organization, and between organizations (Alavi and Leidner 2001, 119). If we consider knowledge as an independent phenomena from the context where it is produced or used,

then we can say that an organization must try to transfer the right knowledge at the right time to the locations where it is needed.

This process can be supported mostly by information and communication technology as in an organization that uses a codification strategy or by extensive personal networks as in an organization that uses a personalization strategy (Hansen et al. 1999). Without knowledge application, all the aforementioned processes are useless. Only knowledge application can ensure that the organization knowledge represents a viable source of competitive advantage. To be of value for organization's stakeholders disposable knowledge needs to be transformed in a lower cost structure, a larger revenue stream or both.

### **2.7.3.3 Technology:**

Although technology has little connection to knowledge, its data warehousing and communication enable individuals, irrespective of their geographical, location, to quickly and easily share knowledge using communication methods such as e-mail, groupware, internet, videoconferencing, and intranets. Technology enables firms to distribute knowledge quickly and smoothly throughout the organization (Alavi and Leidner, 1999).

### **2.7.3.4 Aims of Knowledge Management:**

Although the theories or perspectives differ from one another they appear to have two common characteristics. According to Davenport and Prusak (1998), most knowledge management projects have one of three aims:

Firstly, to make knowledge visible and show the role of knowledge in an organization, mainly through maps, yellow pages, and hypertext tools. Secondly, to develop a knowledge-intensive culture by encouraging and aggregating behaviors such as knowledge sharing (as opposed to hoarding) and proactively seeking and offering knowledge. Thirdly, to build a knowledge infrastructure not only a technical system, but a web of connections among people given space, time, tools, and encouragement to interact and collaborate.

Most of all, knowledge management improves decision making, engenders learning, facilitates collaboration and networking and also encourages and promotes innovation (Liyanage C. and et al, 2009).

## **2.8 Knowledge Sharing**

### **2.8.1 Introduction:**

It's an open secret that today's business organizations greatly depend upon maximizing resources, eliminating redundancy and automating process to meet the business goals. Further it's also clear that Knowledge Sharing has become essential part of Knowledge Management. The effective use of knowledge is a key ingredient in all successful organizations, no matter what business they are doing, what services they may provide. Knowledge sharing has become a key concern to organizations, not only because of the growing importance of the value of knowledge work, but also because of the increasing recognition that tacit knowledge is of more value than explicit knowledge to the innovation process (Marouf, L. 2007).

Kim and Nelson (2000) indicated that knowledge is a resource and knowledge sharing occurs as a dynamic learning process, which implies post-implementation learning may be manifested by the behaviors of knowledge sharing among users. Jarvenpaa and Staples (2000) also argued that the sharing of ideas among employees is a key process and one without which a company may not be able to leverage its most valuable asset. The exchange of knowledge and the development of a collective knowledge management system enhance organizational learning, which in turn leads to innovation and creative imitation (Kim and Lee 2006). Scholars regard knowledge sharing as a critical process of knowledge management (Cabrera & Cabrera, 2002). They suggested that the exchange of knowledge among employees in an organization is a vital component of the knowledge management process.

One area where organizations may be able to increase their innovative performance is knowledge sharing created through interactions among individuals. The value of knowledge sharing is also related to the fact that organizational knowledge is a unique asset difficult to imitate (Sapienza and Lombardino, 2006). Knowledge sharing is therefore believed to enhance the creation of knowledge, potentially enabling new innovative products to be developed at greater speed. However, knowledge sharing does not come about easily. Knowledge sharing is strongly dependent on the setting, various personal beliefs, and practices among the individuals involved (Lilleoere and Hansen "No date"). Knowledge sharing is a practice that has become increasingly important to

organizations as most organizations are now believed to operate in a knowledge economy'' (Drucker, 1993).

It is important for organization to consider the conditions and environments that facilitate new knowledge creation. If an organization wants to increase performance of knowledge creation and also leverage knowledge, then knowledge transfer is necessary (Hansen et al., 2005). Knowledge sharing was characterized by activities of transferring or disseminating knowledge from one person, group or organization to another (Lee, 2001). Knowledge sharing practices coordinate organizational knowledge bases with knowledge workers and vice versa (Nonaka and Konno, 1998). Knowledge sharing takes place when organizational members share organization-related information, ideas, suggestions and expertise with each other (Bartol and Srivastava, 2002).

Knowledge sharing among employees may be helpful in enabling and encouraging employees to use ERP systems because employees prefer to ask colleagues for help when facing obstacles in using an ERP system (Nah & Delgado, 2006). However, the most important activity of KM, knowledge sharing, requires flexible organizational environment, to have more opportunities to communicate with others (Huang, 2004). Opportunities to share knowledge in organizations can be both formal and informal in nature. Although learning channels play an important role in facilitating knowledge sharing, research indicates that the most amount of knowledge is shared in informal settings. Informal opportunities include personal relationships and social networks that facilitate learning and sharing of knowledge (Nahapiet, 1998).

### **2.8.2 Knowledge Sharing Definition:**

Knowledge Sharing has been defined and described in many ways, Kamasak and Bulutlar (2009) defined Knowledge sharing as " a process where individuals mutually exchange their implicit (tacit) and explicit knowledge to create new knowledge"(Kamasak and Bulutlar, 2009).

Knowledge Sharing has also been defined as "The dissemination of information and knowledge throughout the organization "(Ling et al., 2009).

It has been described as " the act of disseminating and making available knowledge that is already known, and knowledge utilization is where learning is integrated into the organization (Tiwana, 2002). Senge (1998) suggested that knowledge sharing is " a transfer process where individual competencies are developed through sharing and

learning from others". However, He argues that Knowledge sharing occurs when an individual is willing to assist as well as to learn from others in the development of new competencies.

Christensen (2007) says that Knowledge sharing is defined as "Being about identifying existing and accessible knowledge, in order to transfer and apply this knowledge to solve specific tasks better, faster and cheaper than they would otherwise have been solved.

Furthermore, knowledge sharing is "The process through which one unit is affected by the knowledge and expertise of another unit" (Friesl et al., 2011).

Knowledge sharing can also be seen as a process of knowledge exchange. It has been argued that the motivation for these different exchanges is related to the expectation of receiving something in return (Fiske, 1991).

Grant (1996) also argues that knowledge sharing is about ensuring that existing knowledge is distributed within or across organizational boundaries.

Thus, the previous definitions of knowledge sharing implies that it is necessary for organizations to explore and exploit their knowledge assets, create new knowledge through utilization of existing knowledge, create a culture that encourages knowledge sharing and re-use, to access to knowledge when its needed to solve specific tasks, develop individual competences through learning from others, and to distribute the existing knowledge within the organization in order to apply it and create new knowledge.

### **2.8.3 Mechanisms for Sharing Individual Knowledge within Organizations:**

The Role of sharing knowledge (explicit or tacit) requires effort on the part of the individual doing the sharing. Bartol and Srivastava (2002) identified four mechanisms. First, contributing knowledge to organizational databases. Second, sharing knowledge in formal interactions within or across teams or work units. Third, sharing knowledge in informal interactions. Forth, sharing knowledge within practice communities.

### **2.8.4 Building a knowledge-sharing culture:**

Three components of organizational culture that are related to effective knowledge sharing are clear organizational vision and goals (Gold, Malhotra, and Segars 2001; Kanter, Stein, and Jock 1992 ), trust (Kanter, Stein, and Jock 1992). DeLong and Mann

(2003) posited employees tend to share knowledge if they feel emotionally committed to the organization's vision and mission. Management actions can have a large influence on increasing employee engagement and affect the knowledge-sharing culture within the organization. Visible and engaged management support may enhance a knowledge-sharing culture. Management may influence employees by establishing a reason to care; feeling employees are a part of something bigger than they are.

Foundational to effective leadership is the establishment and communication of the organizational vision. As expressed by one panelist, People need to feel like they are valued and part of the company. If they can feel that they are part of something greater than their own job or position, they may be more likely to pass on information (McNichols, 2010).

## **2.8.5 Formal and informal knowledge sharing:**

### **2.8.5.1 Formal knowledge sharing:**

Formal learning can be likened to riding a bus, as the route is preplanned and the same for everyone. Formal knowledge sharing comprises all the forms of knowledge sharing that are institutionalized by management. These are resources, services and activities, which are designed by the company or organized with the aim of knowledge sharing or of learning from each other "organizational learning" (Taminiau, and et al., 2009).

According to Nonaka (1994), formal exchange mechanisms, such as procedure, form al language, and the exchange of handbooks will ensure that people will exchange and combine their explicit knowledge. Other examples of formal knowledge sharing are meetings and organized brainstorm sessions. A culture, which makes sure that explicit knowledge is shared does not preclude the sharing of implicit knowledge.

### **2.8.5.2 Informal knowledge sharing:**

Informal knowledge sharing is the communication outside the formal organizational structure that fills the organizational gaps, maintains the linkages, and handles the onetime situations (Jewels, Underwood & de Pablos, 2008). Informal learning also takes place through daily social interactions such as participation in group activities, working alongside others, tackling challenging tasks, and working with clients; the success of these forms of informal learning is highly dependent upon the quality of human relationships in the workplace (Eraut, 2004).

Berg (2008) indicates Informal learning is often described by contrasting it with formal learning. Formal learning can be likened to riding a bus, as the route is preplanned and the same for everyone. Informal learning, then, is more like riding a bike in that the individual determines the route, pace, etc. With regard to informal knowledge sharing the literature often refers to informal networks and informal communication (Awazu, 2004). Argote et al (2003) claim that business relations between colleagues, and friendship relationships (close ties) between the members, will enlarge the possibility of knowledge exchange. Von Krogh et al (2000) state that trust and openness in the business culture are preconditions for knowledge exchange. Sturdy et al (2006) describe the importance of informal setting such as lunches, drinks and dinners.

These informal meetings have proven to facilitate smooth knowledge exchange between consultants and their clients. Informal knowledge sharing will be defined as all forms of knowledge sharing which exist alongside all the institutionalized forms of knowledge sharing. It relates to resources, services and activities, which are used to facilitate knowledge exchange, but are not necessary, designed for that purpose (Taminiau, and et al., 2009).

### **2.8.6 Strategies to promote Knowledge Sharing:**

Although the choice of knowledge-sharing strategies will depend upon available resources, where possible, using more than one strategy may be the best option. A review of the literature on Knowledge Sharing strategies found the following commonly used strategies:

**1. Communities of practice:** This refers to groups of people who do some sort of work together (on line or in person) to help each other by sharing tips, ideas and best practices (Faul and Kemly, 2004).

**2. Knowledge networks:** This refers to a more formal and structured team based collaboration that focuses on domains of knowledge that are critical to the organization which is part of their standardized job (Unepa, 2003).

**3. Retrospect:** This refers to an in-depth discussion that happens after completion of an event, project or an activity to basically capture lessons learnt during the entire activity (Faul and Kemly, 2004). At the end of the session, a documented review of the project

process is created. The main idea behind this meeting is to share feedback with decision makers, improve support from the team and ultimately enhance team building.

**4. Story telling:** This refers to a story telling session whereby the person who attends an event or training session is given the opportunity to disseminate the information knowledge gained to others within the organization (Faul and Kemly, 2004).

**5. Rewards for Knowledge Sharing:** According to a study by Cornelia and Kugel (2004) monetary rewards have an immediate effect on motivation to share knowledge but at the same time bear the risk of spoiling users. However, monetary incentives can be used to start a knowledge management system and to incentivize users from time to time. Yet, in the long-term users should be incentivized non-monetarily for sharing their knowledge.

**6. Linkage with performance appraisal:** Nobody disputes the fact that what gets measured gets done. People do not do what you tell them, but what you measure them for. If people know that one aspect of the performance management is linked to Knowledge Sharing, they will certainly like to ensure that they do not get a low ranking on this dimension (Jain, 2005).

**7. Training:** A regular training on themes like trust building, collaboration building, team building can go a long way in overcoming barriers related to lack of trust, faith, and fear. Presence of top management during these sessions may further leave a positive impact on the participants (Jain, 2005).

### **2.8.7 Barriers to Knowledge Sharing:**

Knowledge sharing barriers are categorized by (Riege, 2005) into three main domains; individual, organizational and technological.

#### **Potential individual barriers:**

- General lack of time to share knowledge, and time to identify colleagues in need of specific knowledge.
- Apprehension of fear that sharing may reduce or jeopardize people's job security.
- Low awareness and realization of the value and benefit of possessed knowledge to others.



- Dominance in sharing explicit over tacit knowledge such as know-how and experience that requires hands-on learning, observation, dialogue and interactive problem solving.
- Use of strong hierarchy, position-based status, and formal power.
- Insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes that would enhance individual and organizational learning effects.
- Differences in experience levels.
- Lack of contact time and interaction between knowledge sources and recipients.
- Poor verbal/written communication and interpersonal skills.
- Age differences.
- Gender differences.
- Lack of social network.
- Differences in education levels.
- Taking ownership of intellectual property due to fear of not receiving just recognition and accreditation from managers and colleagues.
- Lack of trust in people because they may misuse knowledge or take unjust credit for it.
- Lack of trust in the accuracy and credibility of knowledge due to the source.
- Differences in national culture or ethnic background; and values and beliefs associated with it (language is part of this).

**Potential organizational barriers:**

- Integration of knowledge management strategy and sharing initiatives into the company's goals and strategic approach is missing or unclear.
- Lack of leadership and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices.
- Shortage of formal and informal spaces to share, reflect and generate new knowledge.
- Lack of a transparent rewards and recognition systems that would motivate people to share more of their knowledge.
- Existing corporate culture does not provide sufficient support for sharing practices.

- Knowledge retention of highly skilled and experienced staff is not a high priority.
- Shortage of appropriate infrastructure supporting sharing practices.
- Deficiency of company resources that would provide adequate sharing opportunities.
- External competitiveness within business units or functional areas and between subsidiaries can be high.
- Communication and knowledge flows are restricted into certain directions (e.g. top down).
- Physical work environment and layout of work areas restrict effective sharing practices.
- Internal competitiveness within business units, functional areas, and subsidiaries can be high.
- Hierarchical organization structure inhibits or slows down most sharing practices.
- Size of business units often is not small enough and unmanageable to enhance contact and facilitate ease of sharing.

**Potential technology barriers:**

- Lack of integration of IT systems and processes impedes on the way people do things.
- Lack of technical support (internal or external) and immediate maintenance of integrated IT systems obstructs work routines and communication flows.
- Unrealistic expectations of employees as to what technology can do and cannot do.
- Lack of compatibility between diverse IT systems and processes.
- Mismatch between individuals' need requirements and integrated IT systems and processes restricts sharing practices.
- Reluctance to use IT systems due to lack of familiarity and experience with them.
- Lack of training regarding employee familiarization of new IT systems and processes.

- Lack of communication and demonstration of all advantages of any new systems over existing ones.

## **2.9 ICTs (Information and Communication Technologies)**

Information and communication technology (ICT) has made it possible to preserve valuable explicit knowledge for the future and to share a huge amount of information unconstrained by the boundaries of geography and time (Churchman, 1972).

Gold et al (2001) stated that information technology is an infrastructure capability as it facilitates knowledge flow and eliminates barriers to communication within an organization. He also identified information technology, organizational structure, and culture as infrastructure capabilities, and acquisition, conversion, application and protection as process capabilities. Information Systems can support knowledge sharing providing help in acquiring, storing, distributing and applying knowledge, as well as in supporting processes for creating new knowledge, and integrating it into the organization (Laudon and Laudon, 2006). Computer-based Information Systems with storage and retrieval technologies can contribute then to enhance organizational memory. To enhance knowledge sharing among people and organizations, Information Systems supporting knowledge-based processes have to be guided by an understanding of the nature and types of the organizational knowledge. Under an organizational perspective computer-based Information Systems promise to increase and enhance the effectiveness of organizational knowledge by embedding knowledge into organizational routines (Alavi and Leidner, 2001).

## **2.10 ERP systems and knowledge sharing**

Gattiker and Goodhue (2000) suggested that ERP systems may hinder local business processes innovation. The people who work closest to a business process and its information system interface often best understand how it works and how it could be improved. Indeed, “tinkering” or experimenting with small changes drives improvement in many firms.

Knowledge sharing after ERP implementation involves more than the connection of how to perform routine tasks; it enables employees to develop and exchange their underlying opinions, assumptions and the ways of working (Markus & Tanis 2000).

Colleagues' sharing feedback could produce improved ERP system usage (Nah & Delgado, 2006). In addition, research found that employees could quickly update each other with tips on work when one figures out how to perform a useful task (Boudreau's, 2003). Knowledge sharing is a key factor in successful ERP system usage (Park, Suh, & Yang, 2007).

That is, by knowledge sharing, employees can exchange their knowledge to generate new knowledge jointly which reduce and facilitate the complexity of ERP system usage.

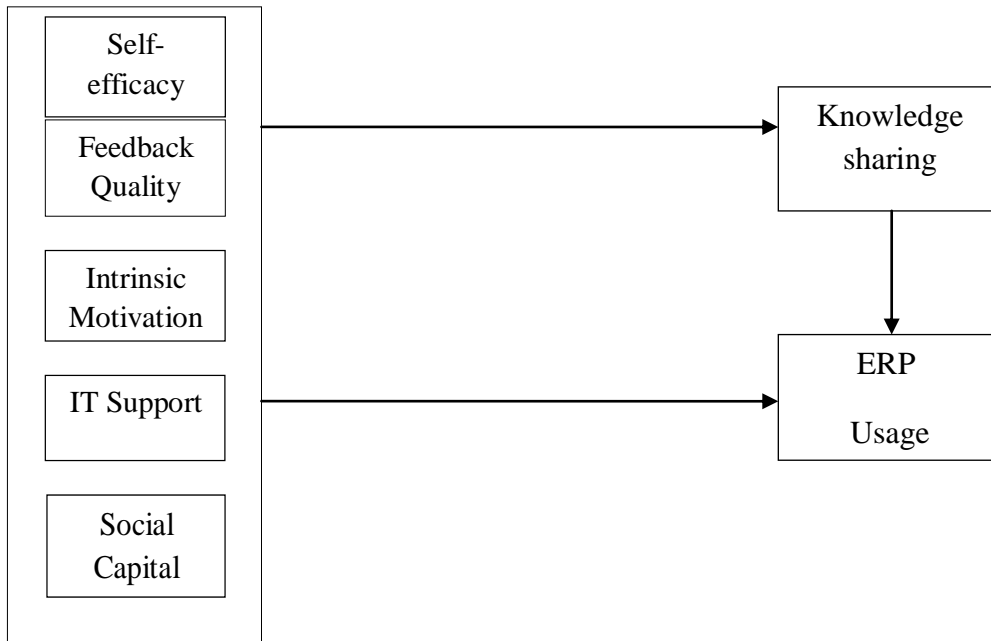
## **2.11 Research model and research hypotheses**

This study designed to examine selected antecedents supporting knowledge sharing and the role of knowledge sharing in facilitating ERP system usage.

Extant literature reveals that ERP systems integrate all business processes and daily operational data. Knowledge sharing is critical to the success of ERP implementation, which helps employees in enabling and encouraging employees to use ERP system and thus gain the potential benefits of usage. When the proceeding of intra-organizational knowledge sharing activities in business operation become higher and the employees have more information to share with others, ERP system usage can gain the greatest benefits. Thus, the proceeding of intra-organizational knowledge sharing activities may facilitate ERP systems usage. Additionally, companies provide employees a flexible environment. In such an environment, people have more opportunities to communicate with others and further share their knowledge (Huang, 2004).

Now a day, companies are trying to won ERP systems which designed to promote efficiency and hence to gain the competitive advantages. The efficiency comes from highly integrated business processes. After an ERP system has been implemented, the ERP system cannot successfully bring the potential benefits in many companies (Hung et al., 2012). Hence this study focuses on the using of the ERP system in post implementation stage. According to the research purposes and literatures reviewed, the model was developed as depicted in Figure (2.2).

## Factors affected on KM & ERP



**Figure (2.2) Conceptual Map-developed by researcher-based on (chou et al., 2014)**

### 2.11.1 ERP system usage

Extant literature reveals that companies need to induce and enable users' usage of ERP systems to maximize ERP benefits after ERP implementation.

ERP system usage is a measure of how users apply and use the features of an ERP system (Nwankpa & Roumani, 2014b). ERP usage appears as an important success measure in the ERP post-implementation phase (Lorenzo, 2001). Thus, ERP system usage is an important measure for ERP system success after ERP implementation.

Zuboff (1988) identified two functional roles of IT in organizations: automating and informing. According to (Lorenzo, 2001),

Jaspersen et al. (2005) indicated that organizations need to enable users' usage of ERP systems to gain ERP benefits after ERP implementation.

Informing functions translate descriptions and measurements of activities and enables ERP systems to be used for solving problems and justifying decisions (decision support), for coordinating activities among different business areas and among superiors and subordinates (work integration), and for servicing both internal and external customers (customer service) (Lorenzo, 2001).

### **2.11.2 Knowledge sharing**

Knowledge sharing is the process by which individuals mutually exchange their knowledge and create new knowledge jointly (van den Hooff & de Ridder, 2004). ERP systems facilitate organizations' work by streamlining business processes and integrating business functions Chou et al (2014). According to Markus and Tanis (2000), knowledge sharing after ERP implementation involves more than the connection of how to perform routine tasks; it enables employees to develop and exchange their underlying opinions, assumptions and the ways of working. Colleagues' sharing feedback could produce improved ERP system usage (Nah & Delgado, 2006). That is, through knowledge sharing, users can exchange what they know to create new knowledge jointly, enable correct operations and, consequently, facilitate system usage. Knowledge sharing is a key factor in successful ERP system usage (Park, Suh, & Yang, 2007). Hence, this research proposes that:

*-Knowledge sharing is positively related to ERP system usage after ERP implementation.*

### **2.11.3 Intrinsic Motivation**

Much prior research has demonstrated that motivation is a very important key to knowledge sharing. Meaning that, both intrinsic motivation and extrinsic motivation made significant impacts on knowledge sharing. Motivation theory may play an important role in helping to understand and promote knowledge sharing (Lin, 2007), extrinsic motivation is likely to encourage people to share knowledge if they believe that sharing knowledge will lead to receiving rewards. On the other hand, intrinsic rewards give individuals a feeling of satisfaction and a sense of accomplishment (Blau, 1964). Companies should reward people who participate in knowledge sharing (Cabrera & Cabrera, 2002). This is especially true when employees are preoccupied with daily operations after ERP implementation (Chou et al., 2014). On the other hand, recently research is contrary to these commonly accepted beliefs. Interventions to motivate people to share knowledge were focused on internal motivation rather than external motivation (Jones, Cline & Ryan, 2003). According to (Chou, Lin, Lu, Chang & Chou, 2014) employees prefer to ask colleagues for help when they face problems in operating ERP systems, they prefer to ask colleagues for help and subsequently

complete daily work successfully through knowledge sharing, and thus earn the intangible intrinsic rewards (such as respect, reputation, and praise) that may be more important than the extrinsic rewards. For example, team members participated in both formal and informal teambuilding exercises to motivate them to be willing to share what they knew. The informal activities were primarily social activities to help people get to know each other better so that they would feel comfortable with each other. This helped create an environment in which people felt comfortable sharing knowledge, and thus were more willing to do so (Jones, Cline & Ryan, 2003).

Chou et al. (2014) found there is an insignificant and negative effect of extrinsic motivation on knowledge sharing which confirmed with many studies as Osterloh and Frey (2000).

So, the research reported here includes study of intrinsic motivation only as antecedents of knowledge sharing in the context of ERP post-implementation. And this implies that intrinsic motivation will have a positive impact on employees' knowledge sharing after ERP implementation. Therefore, the hypothesis is given.

*-Intrinsic motivation is positively related to knowledge sharing after ERP implementation.*

*-Intrinsic motivation is positively related to ERP usage.*

#### **2.11.4 IT Support**

Researchers have emphasized the importance of IT infrastructure and application in linking organizational information with knowledge integration (Alavi and Leidner 2001; Davenport 1997; Grant 1996; Leonard 1995; Teece 1998). Alavi and Leidner (2001) note that IT increases knowledge transfer by extending an individual's reach beyond formal lines of communication. Davis and Riggs (1999) extend the IT application list for knowledge sharing to include internet based network systems, groupware systems, intranets, databases, electronic data-management systems, and knowledge-management information systems. Another important component of IT that is related to knowledge sharing is the degree to which end-user ease is a focus of information system development. Regardless of the technology, IT system and software developers must create user-friendly products that promote their acceptance and use (Branscomb and Thomas 1984; Davis 1989). Therefore, the employees with use friendly to information

systems will be more willing to share knowledge after the ERP implementation. So, the hypotheses are established as follows:

*-IT support positively related to Knowledge sharing.*

*-IT support positively related to ERP usage.*

### **2.11.5 Self-efficacy**

Self-efficacy refers to an individual's perception concerning his (her) own ability to execute courses of action needed to achieve designated performance (Bandura, 1986). It is the people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances (Rajan.c, Baral.R, 2015). An individual's perceived self-efficacy affects his (her) behaviors and decisions (Chou et al., 2014). Individuals who have higher judgments of self-efficacy are more likely to cooperate and disclose knowledge (Abrams et al., 2003), and thereby promote knowledge sharing (Cabrera & Cabrera, 2002). Campeau and Higgins (1995) indicated that prior experience in training had a significant impact on self-efficacy in using a software package. During the ERP pre-implementation stage, many companies would provide training programs for users to ensure that end users acquire sufficient key knowledge on how to execute tasks in an ERP system (Chou et al., 2014). Hence, it can propose that employees with higher self-efficacy will be more willing to share knowledge after the ERP implementation. This study proposes the hypothesis as follows:

*-Self-efficacy is positively related to knowledge sharing after ERP implementation.*

*-Self Efficacy is positively related to ERP usage.*

### **2.11.6 Social Capital**

The Social Capital can be understood as a set of informal norms and values, common to the members of a specific group that allows the cooperation among them. Therefore, it is a component of the Social Theory that is being considered as a key-element for the human and economic development. Social capital, referring to "the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes, 1998; p. 6), involves not only an individual's social network ties and shared goals with others, but also a sense of trust in others in a community or social network (Inkpen & Tsang, 2005). If end users do not obtain sufficient knowledge, they cannot



execute tasks in an ERP system sufficiently well to meet their job demands. So they need to trustworthy colleagues within their social network or community to acquire necessary ERP knowledge and skills (Chou et al., 2014). Nahapiet and Ghoshal (1998) confirmed that social capital plays an important role in knowledge sharing and is a requisite of it. Because an ERP system integrates the complete range of business processes in an organization, it requires users to work more tightly together. Thus, when the enterprise has a trust and a good relationships, better knowledge sharing was occur which may facilitated ERP usage.

Therefore, ERP users' social capital is critical to their knowledge sharing after ERP implementation. This study proposes the hypothesis as follows:

*-Social capital is positively related to knowledge sharing after ERP implementation.*

*-Social Capital is positively related to ERP usage.*

### **2.11.7 Supervisory Feedback& Support**

Research on supervisory support has found that it is a vital factor in organizational effectiveness across many industries (e.g., Lu, Cooper, & Lin, 2013; Thomas, Bliese, & Jex, 2005; Tourigny, Baba, & Lituchy, 2005). The notion of perceived supervisory support stems from social exchanges between the individual and the supervisor and is based on social exchange theory and the norm of reciprocity .Social exchange theory, a motivational theory, explains that a basic form of human interaction occurs during exchanges of resources between individuals (Emerson & Cook, 1978).

Supportive work environments are associated generally with improved work-place attitudes and more productive behaviors (Day and Bedeian, 1991). Supportive casino environment characterized by employee perceptions along the interrelated dimensions of work involvement and supervisory support.

Supervisors are considered as agents of the organization, who are responsible for providing information on organizational goals and values, implementing policies, scheduling work, setting performance standards, and performing appraisals (Kreitner, Kinicki, & Buelens, 2002). Therefore, the supervisor is in regular contact and forms relationships with subordinates in the workplace. The quality of the relationship between an employee and the supervisor can be a source of motivation for the employee to achieve higher performance and develop positive attitudes. Ishak (2005) demonstrated that employees in higher quality supervisor-subordinate relationships

were motivated to perform citizenship behaviors. Thus, supervisors play critical roles in the motivation of employees to develop positive work attitudes and behaviors. According to Rajan.C, Baral.R (2015) top management support is defined as the willingness of top management to provide the necessary resources and authority or power for project success. The implementation of an ERP system brings far reaching changes in an organization and its processes. Hence, top management must realize that communication is essential to ensure that employees understand and accept the changes brought about by ERP.

Babin and Boles (1996, p. 60) define supervisory support as “the degree to which employees perceive that supervisors offer employees support, encouragement and concern.” As employees perceive more supervisory support, they feel more secure and sense that the firm takes care of their welfare (DeConinck, 2010).

Thus, supervisory support is a key resource that motivates employees to be engaged in their workplace. Further, supervisory support can alleviate some of the stress and strain imposed by the high demands associated with the job (Babin & Boles, 1996). Consequently, when employees feel that they are furnished with adequate resources such as supervisory support, high job demands feel less daunting and employees remain engaged in their work (Sand & Miyazaki, 2000). And when employees are strongly attached to their supervisors, they have the propensity to perform well on the job and will not entertain the cognition to leave the organization (Vandenberghe, Bentein, & Stinglhamber, 2004). Conversely, when supervisory support is lacking and employees perceived less supervisory support (or worked under abusive supervisors), employees question their value and contribution to the organization and feel detached, frustrated, helpless, and performed less citizenship behaviors compared with their counterparts who did not. The hypothesis is purposed as the following:

*-Supervisory support is positively related to knowledge sharing.*

*-Supervisory support is positively related to ERP usage.*

Drawing on Jaworski and Kohli (1991), we define supervisory feedback as employees' perception that they are receiving clear information about their performance outcome and suggestions for improvement. When employees perceive sufficient developmental feedback, they have accurate guidance on how to become more effective (Jaworski & Kohli, 1991). This, in essence, fosters more communication between the two parties and

helps the firm [or supervisor] map out ways to improve performance (Ashford & Cummings, 1983). When employees perceive that they are receiving more candid and accurate developmental feedback, they sense that supervisors are interested in their growth, development, and learning (Ashford & Cummings, 1983). Providing corrective measures to get employees back on track or reinforcing their effectiveness motivates employees to be more engaged. In contrast, a lack of feedback can create ambiguity, conflict, and confusion about what is expected (Jaworski & Kohli, 1991). The absence of developmental feedback can create a lack of stimulation and fewer opportunities for change and innovation. Collectively, this can lead to less enthusiasm, energy, passion, and inspiration regarding the job.

*-Supervisory developmental feedback is related positively to Knowledge sharing.*

*- Self Supervisory feedback is positively related to ERP usage.*

# **Chapter Three: Previous Studies**

**3.1 Introduction**

**3.2 Previous Studies**

**3.3 Comments and Conclusion**

### **3.1 Introduction:**

In this chapter, the researcher aimed to provide an overview of the literature that studied ERP system usage and success, some antecedents affected on knowledge sharing and ERP usage, and the impact and benefits of applying this system on the organization and customers.

### **3.2 Previous Studies:**

Twenty studies were chosen to summarize which covered the subjects of the ERP and knowledge sharing. These studies were arranged in descending order from 2015 to 1995.

#### **1-Nwankpa. J (2015)**

##### **"ERP System Usage and Benefit: A model of Antecedents and Outcomes."**

The study developed a theoretical model that examined the mediating effect of ERP system usage on ERP benefits. The study also identified the antecedents of ERP system usage.

A model was tested using the responses of 157 ERP system end-users across the United States. A web-based survey instrument was developed and administered for the empirical analysis of the proposed hypotheses.

The findings supported the proposed hypotheses. These findings contributed to a deeper understanding of ERP system benefit and provided a foundation for future investigations and insights for organizations faced with the challenge of maximizing the inherent values of their ERP systems.

The results also reveal that technical resources, organizational fit and the extent of ERP implementation are key drivers of ERP system usage. The research findings advanced our knowledge on how managers can enhance ERP usage and realize optimal ERP benefits.

#### **2- Rajan.C, Baral.R (2015)**

##### **"Adoption of ERP System: An Eempirical Study of Factors Influencing the Usage of ERP and its Impact on End User."**

The study proposed and examined a conceptual framework to find the effect of some of the individual, organizational, and technological factors on the usage of ERP and its impact on the end user.

A survey questionnaire was developed. The research target were end users of ERP systems in selected Indian organizations. The responses were obtained only from employees who used ERP for their regular work. A total of 181 responses were obtained from end users of ERP, out of which 154 responses were usable.

The findings of this study provided insights for managers to efficiently manage the adoption of the ERP system across the organization. Organizations should understand and identify factors in terms of individual, organizational, and technological characteristics when a complex information system such as ERP is implemented in the organization. Technology acceptance models have been criticized for considering usage as an end in itself. The study tries to identify the impact of usage on the individual's panoptic empowerment and individual performance. Managers should have the goal of not just making use of the system but to make employees satisfied with using the system, to improve their performance, and also to empower them to make decisions.

### **3-Dong. K (2014)**

#### **“The Mediating Role of Knowledge Transfer and the Effects of Client-consultant Mutual Trust on the Performance of Enterprise Implementation Projects”**

The study examined whether mutual trust affected knowledge transfer effectiveness which then impacts project outcome. Building on psychological contract, knowledge management, and trust literature, the results of this matched-pair, field survey suggest knowledge transfer mediates the relationship between mutual trust and project outcome. The results of this study proved that knowledge transfer partially mediated the relationship between mutual benevolence and competence trusts and project outcome. The findings of this study shed some insight in raising awareness of the importance of effectively transferring knowledge for successfully implementing complex information systems.

The results of this study also provide insight regarding the role of competence and benevolence trust with knowledge transfer and project outcome. Though both mutual benevolence and mutual competence trusts positively influenced knowledge transfer and project outcome, mutual benevolence trust impacted them to a greater extent relative to mutual competence trust.

#### **4-Chou.H et al. (2014)**

##### **“Knowledge Sharing and ERP System Usage in Post-implementation Stage”**

The study aimed to develop an understanding of the effect of knowledge sharing on ERP system usage and the factors affecting employees' knowledge sharing after the initial implementation of an ERP system.

The survey instrument was mailed to ERP systems users in 300 companies have implemented ERP systems in Taiwan. Those ERP users in each company consisting of 15–20 participants from various functional departments. A total of 849 questionnaires were mailed and 836 of them were returned, resulting in a response rate of 98.5%. Among the returned questionnaires, 32 were incomplete, which made a valid response rate of 94.7%.

The result of the research showed that social capital, intrinsic motivation, and self-efficacy all have significant impacts on knowledge sharing. However, there is insignificant effect of extrinsic motivation on knowledge sharing. ERP system success will depend on continue learning after implementation. In the context of ERP post-implementation, users could effectively use the ERP system via gaining knowledge from others.

The researcher of this research recommended that the need for deeper research becomes obvious in the conceptual feedback; future research could explore the feedback function in regards to fostering employees' intrinsic motivation in the ERP post-implementation stage.

#### **5-Chou.H et al. (2014)**

##### **"Drivers and Effects of Post-implementation Learning on ERP Usage."**

This study aims to explore the role played by post-implementation learning in ERP usage and understand the way users learn to use ERP systems effectively. Moreover, it's identified social capital and post-training self-efficacy as antecedents to post-implementation learning.

A survey method was employed to collect data from 659 ERP users.

This study find that post-implementation learning contributed to ERP usage, and that social capital and post-training self-efficacy are important antecedents to post-implementation learning. Its findings provided academics and practitioners with an

understanding of how post-implementation learning can be manipulated to improve ERP usage.

#### **6-Candra.S (2012)**

##### **"ERP Implementation Success and Knowledge Capability"**

The study is significant to bring new thinking in determining the key antecedents to successful enterprise resource planning implementation based on knowledge capability perspectives and it helped to understand the key success factor in enterprise resource planning implementation. By using online survey that sent to 150 respondents from top management level that working mostly in multinational company and using ERP system, there are 46 respondents that giving feedback to this online survey.

The result showed that knowledge capability that company have can influenced the success of ERP implementation. Although from the result finding can be concluded that knowledge capability giving significant influenced to the success of ERP implementation, but still have other factor that influence this success, this can be seen, because knowledge capability only giving 28% contribution, so there's 72% that should be find out.

#### **7-Hung et al. (2012).**

##### **"Relationship Bonding for A better Knowledge Transfer Climate: An ERP Implementation Research".**

The paper provided a broader, richer model of knowledge transfer networks to promote insight into successful ERP implementation. In practice, the key to effective knowledge transfer is the establishment of a positive knowledge transfer climate. To achieve a successful ERP implementation, practitioners should focus on developing a positive relationship with ERP implementation partners.

The purpose of this paper is to examine the impact of the knowledge transfer climate and relationship bonding. The model categorized the factors that influence the result of knowledge transfer during ERP implementation into three types: those implemented by the firm, those implemented by the consultant, and those related to the impact of the knowledge transfer climate.

A total of 174 respondents are surveyed with results subjected to multivariate analysis.

The study presented two major findings: (1) Relationship bonding and the knowledge transfer climate are important parts of improving knowledge transfer in ERP



implementation; and (2) relationship bonding between team members needed to be deliberately cultivated, so as to develop a climate that promoted knowledge transfer. This research also found that, by isolating the important factors that encourage the knowledge transfer in ERP implementation, knowledge transfer will be complex but need not be chaotic.

#### **8-Grabski, Leech, & Schmidt (2011)**

**“A review of ERP research: A future Agenda for Accounting Information Systems.”**

This review of ERP research is drawn from an extensive examination of the breadth of ERP-related literature without constraints as to a narrow timeframe or limited journal list, although particular attention is directed to the leading journals in information systems and accounting information systems. The objective of this review is to synthesize the extant ERP research reported without regard to publication domain and make this readily available to accounting researchers.

Early research consisted of descriptive studies of firms implementing ERP systems. Then researchers started to address other research questions about the factors that lead to successful implementations: the need for change management and expanded forms of user education, whether the financial benefit outweighed the cost, and whether the issues are different depending on organizational type and cultural factors. This research encouraged the development of several major ERP research areas: (1) critical success factors, (2) the organizational impact, and (3) the economic impact of ERP systems.

#### **9-Rubina .A , Paula. K & Alta .M (2011)**

**“Acceptance of Enterprise Resource Planning Systems By Small Manufacturing Enterprises..”**

The paper aimed to determine which factors promoted or impeded the sharing of knowledge within groups and organizations constitutes an important area of research.

And it's focused on three such influences: organizational commitment, organizational communication, and the use of a specific instrument of communication – computer-mediated communication (CMC). Two processes of knowledge sharing are distinguished: donating and collecting. A number of hypotheses are presented concerning the influence of commitment, climate and CMC on these processes. These hypotheses were tested in six case studies.

The results showed that commitment to the organization positively influenced knowledge donating, and was in turn positively influenced by CMC use. Communication climate was found to be a key variable: a constructive communication climate was found to positively influence knowledge donating, knowledge collecting and affective commitment. Finally, a relationship was found that was not hypothesized: knowledge collecting influences knowledge donating in a positive sense – the more knowledge a person collects, the more he or she is willing to also donate knowledge to others.

#### **10- Malhotra. R & Temponi.C (2010)**

##### **“Critical Decisions for ERP Integration: Small Business Issues.”**

The focus of this research was to recommend the best practices for each one of key decisions for small businesses. There are six small businesses to recommend best practices for the critical decisions: (1) project team structure, (2) implementation strategy, (3) database conversion strategy, (4) transition technique, (5) risk management strategy and (6) change management strategy.

The results indicated that these best practices greatly enhanced the success of an ERP implementation for small businesses. Further, they recommend studying the impact of ERP systems on the small business' participation in supply chain management.

#### **11-Yoon. Cheolho (2009)**

##### **“ The Effects of Organizational Citizenship Behaviors on ERP System success. Computers in Human Behavior”**

The purpose of this study was to explore the effect of organizational citizenship behaviors (OCBs) on ERP system success. The research model included the relationships between the OCBs constructs and ERP system success variables of information quality, work efficiency, and intention of IT innovation was proposed and empirically analyzed using structural equation modeling. The contribution of this study is to provide strategic insights for successfully managing ERP systems by identifying the effects of organizational citizenship behaviors in ERP context.

The researcher found that the organizational citizenship behaviors effected on ERP success, and the employees would like to share working knowledge and experience with colleagues voluntarily and unconditionally. Finally, this paper concluded that the

success of knowledge sharing in organizations, depend not only technological means, but is also related to behavioral factors.

**12-Kim.S & Lee. H (2006)**

**"The impact of organizational context and information technology on employee knowledge-sharing capabilities."**

The article analyzed the impact of organizational context and IT on employees' perceptions of knowledge-sharing capabilities in five public sector and five private sector organizations in South Korea.

A total of 400 surveys were hand-delivered to the 10 divisions. For the public sector organizations, 165 questionnaires were returned; three of those were discarded because they were incomplete. Among the private sector organizations, 163 questionnaires were returned, three of which were discarded for the same reason. The final number of usable questionnaires was 322.

This study found that Social networks, centralization, performance-based reward systems, employee usage of IT applications, and user-friendly IT systems are significant variables that affect employee knowledge-sharing capabilities in public and private organizations. Efforts to improve the knowledge-sharing capabilities of employees in government require organizational leaders to commit, to promoting informal and formal networks and knowledge-oriented management practices. To transform a government agency into a knowledge-sharing community, decision makers should assess the knowledge-sharing needs within the agency. Further, they recommend studying the nature of knowledge, motivational, relationships with recipients and their impact on employee knowledge sharing.

**13-Kwok, S. H & Gao. S (2006).**

**"Attitude Towards Knowledge Sharing Behavior."**

The study focused on an individual's behavior of knowledge sharing with respect to information systems/information technology (IS/IT) by investigating their attitude towards knowledge sharing. Three variables, namely extrinsic motivation, absorptive capacity and channel richness, were examined as influential factors affecting people's attitude towards knowledge sharing.

A structural survey was conducted to test the relationships between attitude and the three variables. The results show that extrinsic motivation imposed no impact on an

individual's attitude towards knowledge sharing while the other two factors played a significant part.

**14-Nah.F & Delgado. S (2006)**

**“ Critical Success Factors For Enterprise Resource Planning Implementation And Upgrade”**

The aim of this thesis is to understand the critical success factors for enterprise resource planning implementation.

The foundation of this research is that the importance of the seven categories of critical success factors across the four phases of the ERP lifecycle was very similar for both the implementation and upgrade projects. ERP Team composition, skills and compensation, project management and system analysis, selection and Technical implementation are most important during the Project phase. Business plan and vision and top management support and championship are critical during the chartering phase while communication and change Management are very important during the Project and shakedown phases. ERP team compensation, skills and Compensation play the most critical role in both ERP implementation and upgrade projects.

**15-Ko, D. I., Kirsch, L. J. & King, W. R (2005).**

**Antecedents of Knowledge Transfer from Consultants to Clients in Enterprise System Implementations.**

This study examined the antecedents of knowledge transfer in the context of such an inter firm complex information systems implementation environment.

An integrated theoretical model was developed .Whereas knowledge transfer influenced by knowledge-related, motivational, and communication related factors.

Data were collected from consultant- and-client matched-pair samples from 96 ERP implementation projects. Unlike most prior studies, a behavioral measure of knowledge transfer that incorporates the application of knowledge was used.

These results (1) adapted prior research, primarily done in non-IS contexts, to the ERP implementation context, (2) enhanced prior findings by confirming the significance of an antecedent that has previously shown mixed results, and (3) incorporated new IS-related constructs and measures in developing an integrated model that should be broadly applicable to the inter firm IS implementation context and other IS situations.

**16- Huang ,Shu-Yi (2004)**

**“ERP Systems and Knowledge Sharing: The Convergence of Efficiency and Flexibility”**

The objective of this research was to examine the relationships between ERP system and intra-organizational knowledge sharing level.

The results of this paper point out that the relationships between ERP implementation and knowledge sharing seem positive and there is no significant conflict found. Some effects of ERP systems were confirmed that can be facilitators to promote knowledge sharing activities within organizations in two aspects: technology and organization. ERP systems can increase the opportunities to share knowledge and enhance employees' motivations to share knowledge.

The finding of the research also showed that organizations have no problem accommodating both ERP systems and knowledge sharing processes. Therefore, there is no need to assign priorities to these two organizational variables.

**17-Jones.M, Cline.M, Ryan.S (2003).**

**Exploring Knowledge Sharing in ERP Implementation: an Organizational Culture Framework**

This is a multi-site case study of firms that have implemented enterprise resource planning (ERP) systems. It examines eight dimensions of culture and their impact on how ERP implementation teams are able to effectively share knowledge across diverse functions and perspectives during ERP implementation.

Data were collected using a multi-site case study of four firms in the petroleum industry that had implemented SAP R/3(one of the most widely used ERP packages in the petroleum industry). A single industry and a single ERP software package were chosen to minimize bias that might be introduced because of differences across industries and across ERP software.

A cultural configuration was developed which shows the dimensions of culture that best facilitate knowledge sharing in ERP implementation. The results also indicate ways that firms may overcome cultural barriers to knowledge sharing. A model is developed that demonstrates the link between the dimensions of culture and knowledge sharing during ERP implementation.

**18-Zhou, J & George, J. M (2001).**

**"When Job Dissatisfaction Leads to Creativity: Encouraging the Expression of Voice."**

The study focused on the conditions under which job dissatisfaction will lead to creativity as an expression of voice.

Respondents in this study were 149 office employees from a company that manufactures petroleum drilling equipment. The employees held all types of jobs. The questionnaires were distributed through the company's internal mailing system to the potential respondents.

The useful feedback from coworkers, coworker helping and support, and perceived organizational support for creativity interact with job dissatisfaction and continuance commitment (commitment motivated by necessity) to result in creativity. When continuance commitment was high and when (1) useful feedback from coworkers, or (2) coworker helping and support, or (3) perceived organizational support for creativity was high.

**19-Doll, W. J & Torkzadeh, G (1998).**

**Developing a Multidimensional Measure of System-use in an Organizational Context. Information & Management.**

The paper made an effort to develop new multidimensional measures of how extensively information technology was utilized in an organizational context for decision support, work integration, and customer service functions.

System-use was a pivotal construct in the system-to-value chain that linked upstream research on the causes of system success with downstream research on the organizational impacts of information technology. The new measures are appropriated for use as dependent variables in upstream research, or as independent or mediating variables in downstream research on the impact of information technology on work. A sample of 409 end-users enabled the researchers to provide evidence of this instrument's reliability, validity, and general applicability developing a multidimensional measure of system-use in an organizational context.

## **20- Compeau. D, Higgins. C (1995)**

### **"Computer Self-Efficacy – Development of a Measure and Initial Test."**

The paper discussed the role of individuals' beliefs about their abilities to competently use computers (computer self-efficacy) in the determination of computer use.

A survey of Canadian managers and professionals was conducted to develop and validate a measure of computer self-efficacy and to assess both its impacts and antecedents. Of the 2,000 surveys mailed, 1,020 were completed and returned.

The paper indicate that an individual's self-efficacy and outcome expectations were found positively influenced by the encouragement of others in their work group, as well as others' use of computers.

Thus, self-efficacy represents an important individual trait, which moderates organizational influences (such as encouragement and support) on an individual's decision to use computers.

### **3.3 Comments and Conclusions:**

The researcher used the previous studies to acquire a wide understanding to the context of the study literature and identify efforts in ERP implementation, which was necessary in selecting the variables, developing hypothesis and the environment of the research. These previous studies were also important in the analysis process as well as the interpreting to the results of the study by comparing the findings with those of the previous studies.

As shown, many researchers studied the knowledge sharing by using different variables affected it and the role of knowledge sharing in facilitating ERP system usage and successes.

The researcher found that most of previous studies proved that extrinsic motivation did not encourage knowledge sharing after ERP implementation and not be as effective as intrinsic motivation. So, this study addressed the intrinsic motivation only, and it tried to take in consideration all aspects and theories to detect the role of knowledge sharing and the drivers of the antecedents in facilitating ERP system usage. Table 3.1 shows the summary of some previous studies.

**Table 3.1: Summary of some previous studies.**

#	The Study	Main Findings
1.	<b>Nwankpa. J (2015)</b>	Technical resources, organizational fit and the extent of ERP implementation are key drivers of ERP system usage. The research findings advanced our knowledge on how managers can enhance ERP usage and realize optimal ERP benefits.
2.	<b>Rajan.C, Baral.R (2015)</b>	Organizations should understand and identify factors in terms of individual, organizational, and technological characteristics when a complex information system such as ERP is implemented in the organization. And managers should have the goal of not just making use of the system but to make employees satisfied with using the system, to improve their performance, and also to empower them to make decisions.
3.	<b>Dong. K (2014)</b>	The findings of this study shed some insight in raising awareness of the importance of effectively transferring knowledge for successfully implementing complex information systems. The results of this study also provided insight regarding the role of competence and benevolence trust with knowledge transfer and project outcome.
4.	<b>Chou.h et al. (2014)</b>	Social capital, intrinsic motivation, and self-efficacy all have significant impacts on knowledge sharing. However, there is insignificant effect of extrinsic motivation on knowledge sharing. ERP system success depend on continue learning after implementation. Users could effectively use the ERP system via gaining knowledge from others.
5.	<b>Chou.H et al. (2014)</b>	This study finds that post-implementation learning contributes to ERP usage, and that social capital and post-training self-efficacy are important antecedents to post-implementation learning. It's findings provide academics and practitioners with an understanding of how post-implementation learning can be manipulated to improve ERP usage.



#	The Study	Main Findings
6.	<b>Candra.S (2012)</b>	Knowledge capability that company have can influenced the success of ERP implementation and giving significant influenced to the success of ERP implementation, but still have other factor that influenced this success, this can be seen, because knowledge capability only giving 28% contribution, so there's 72% that should be find out.
7.	<b>Hung, W. H et al. (2012)</b>	Relationship bonding and the knowledge transfer climate are important parts of improving knowledge transfer in ERP implementation; and relationship bonding between team members needed to be deliberately cultivated, so as to develop a climate that promoted knowledge transfer.
8.	<b>Grabski, Leech, &amp; Schmidt (2011)</b>	This research encouraged the development of several major ERP research areas: (1) critical success factors, (2) the organizational impact, and (3) the economic impact of ERP systems. The objective of this review was to synthesize the extant ERP research reported without regard to publication domain and make this readily available to accounting researchers.
9.	<b>Malhotra.R &amp; Temponi.C (2010)</b>	Best practices for the critical decisions": (1) project team structure, (2) implementation strategy, (3) database conversion strategy, (4) transition technique, (5) risk management strategy and (6) change management strategy. " greatly enhanced the success of an ERP implementation for small businesses.
10.	<b>Yoon.Cheolho (2009)</b>	Organizational citizenship behaviors effect on ERP success, and the employees would like to share working knowledge and experience with colleagues voluntarily and unconditionally. And success of knowledge sharing in organizations, depended not only technological means, but is also related to behavioral factors.
11.	<b>Kim. S &amp; Lee. H (2006)</b>	Social networks, centralization, performance-based reward systems, employee usage of IT applications, and user-friendly IT systems are significant variables that affected employee knowledge-sharing capabilities in public and private organizations. And Efforts to improve the knowledge-sharing capabilities of employees in government require organizational leaders to commit, to promoting informal and formal networks and knowledge-oriented management practices.

#	The Study	Main Findings
12.	<b>Kwok.S &amp; Gao.S (2006)</b>	Extrinsic motivation imposed no impact on an individual's attitude towards knowledge sharing while the other two factors (absorptive capacity and channel richness) played a significant part.
13.	<b>Nah. F &amp; Delgado. S (2006)</b>	The importance of the seven categories of critical success factors across the four phases of the ERP lifecycle was very similar for both the implementation and upgrade projects. ERP team compensation, skills and Compensation played the most critical role in both ERP implementation and upgrade projects.
14.	<b>Ko.D , Kirsch.L &amp; King. W (2005).</b>	These results (1) adapted prior research, primarily done in non-IS contexts, to the ERP implementation context, (2) enhanced prior findings by confirming the significance of an antecedent that has previously shown mixed results, and (3) incorporated new IS-related constructs and measures in developing an integrated model that should be broadly applicable to the inter firm IS implementation context and other IS situations.
15.	<b>Rubina.A , Paula. K &amp; Alta.M (2011)</b>	Commitment to the organization positively influenced knowledge donating, and was in turn positively influenced by CMC use. Communication climate was found to be a key variable: a constructive communication climate was found to positively influence knowledge donating, knowledge collecting and affective commitment. The more knowledge a person collected, the more he or she was willing to also donate knowledge to others.
16.	<b>Huang.Shu-Yi (2004)</b>	The relationships between ERP implementation and knowledge sharing seemed positive and there is no significant conflict found. Some effects of ERP systems were confirmed that can be facilitators to promote knowledge sharing activities within organizations in two aspects: technology and organization. ERP systems can increase the opportunities to share knowledge and enhanced employees' motivations to share knowledge.

#	The Study	Main Findings
17.	<b>Jones.M, Cline.M, Ryan.S (2003)</b>	A cultural configuration was developed which showed the dimensions of culture that best facilitate knowledge sharing in ERP implementation. The results also indicated ways that firms may overcome cultural barriers to knowledge sharing.
18.	<b>Zhou. J &amp; George.J (2001).</b>	The useful feedback from coworkers, coworker helping and support, and perceived organizational supported for creativity interact with job dissatisfaction and continuance commitment (commitment motivated by necessity) to result in creativity. When continuance commitment was high and when (1) useful feedback from coworkers, or (2) coworker helping and support, or (3) perceived organizational support for creativity was high.
19.	<b>Doll. W &amp; Torkzadeh. G (1998)</b>	System-use was a pivotal construct in the system-to-value chain that links upstream research on the causes of system success With downstream research on the organizational impacts of information technology. The new measures are appropriated for use as dependent variables in upstream research, or as independent or mediating variables in downstream research on the impact of information technology on work.
20.	<b>Compeau.D, Higgins (1995)</b>	An individual's self-efficacy and outcome expectations were found positively influenced by the encouragement of others in their work group, as well as others' use of computers. Thus, self-efficacy represented an important individual trait, which moderated organizational influences (such as encouragement and support) on an individual's decision to use computers.

# **Chapter Four:**

# **Research Methodology**

**4.1 Introduction**

**4.2 Research Methodology**

**4.3 Population & Sample**

**4.4 Research Instruments**

**4.5 Study Application Procedures**

**4.6 Statistical Analysis**

**4.7 Statistical Analysis Tools**

**4.8 Validity & Reliability of the Study Instruments**

## **4.1 Introduction**

This chapter addresses the study methodology and detailed procedures. The qualitative method used to conduct this study; includes the research design, population and sample, research Instrument, data collection criteria and the tools used in data collection. Moreover, variables measurement, reliability and validity of the instrument, scoring techniques, data-gathering procedures, and the procedure of statistical analysis are discussed in this chapter.

## **4.2 Research Design**

The research design is important because it is an illustration of the operation's flow in the research. The first phase of the research thesis proposal included identifying and defining the problems and establishment objective of the study and development research plan. The second phase of the research included a summary of the comprehensive literature review. The third phase of the research included a field survey which was conducted with determining the Survey of employees' knowledge sharing in facilitating ERP system usage. The fourth phase of the research focused on the modification of the questionnaire design. The fifth phase of the research focused on distributing questionnaire. This questionnaire was used to collect the required data in order to achieve the research objective. The sixth phase of the research was data analysis and discussion. Statistical Package for the Social Sciences, (SPSS) was used to perform the required analysis. The final phase includes the conclusions and recommendations.

## **4.3 Research Methodology**

The descriptive analytical method was followed in conducting the research, which is considered as the most used in business and social studies. This section presents the methods used to carry out the research and answer the research questions. In order to collect the needed data for this research. The method used is: a questionnaire used to collect the primary data of the survey; many statistical analyses by SPSS.

### **4.3.1 Duration of the Study**

The study has been conducted on the period of December, 2014 - May, 2015. Data collection was carried out during the first three weeks of April, 2015.

### **4.3.2 Place of the Study**

The study was applied on European Gaza Hospital in Gaza strip.

### **4.3.3 Data collection procedures:**

#### **4.3.3.1 Secondary Sources**

To introduce the theoretical literature of the subject, the researcher has used plenty of secondary data resources to justify the problem and gain maximum information. This resource is essential to gain understanding of the research area and what has been already done. The used secondary included:

1. Scientific journals and academic magazines.
2. Thesis and dissertations accessed through the universities' libraries.
3. Text books and research papers.
4. Internet articles and websites.

#### **4.3.3.2 Primary Sources**

The primary source is data that was collected through a designed questionnaire survey distributed to the target sample for research purpose. Whereas, survey was defined as "investigation of the opinions, behavior, etc. of a particular group of people, which is usually done by asking them questions" (Oxford Advance Learners Dictionary, 2007). Thus, one of the main outcomes of the literature review was the structuring of the questionnaire. Additionally, questionnaire approach has been used as a quantitative approach to gain insights and to understand perception regarding the knowledge sharing and it's important to success the ERP system usage. A structured questionnaire including close ended questions was specially designed for this study (Appendix "1"). Whereas, questionnaire has been developed based on the literature and has been modified regarding the supervisor's recommendations. Although questionnaires may be cheap to administer compared to other data collection methods, they are expensive in terms of design time and interpretation.

#### **4.4 Study Population**

The research population was mainly the employees in all departments of the European Gaza Hospital who use the system.

#### **4.5 Study Sample**

Fellows and Liu (2008) defined the sample as a part of total population that represents this population. Israel (2003) explained that, there are several approaches to determining the sample size. Fellows and Liu, (2008) showed that, three types of sampling can be conducted during the research study; a systematic sampling, stratified sampling, and the cluster sampling. The sample used in this research is a random sample. The target population was 625 employees, which represented the total number of hospital employees who use the system. The researcher distributed 265 questionnaires and retrieved 235 completed and 6 not completed.

#### **4.6 Research Instruments and Measures**

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. The scales to measure these constructs were based on previous research. The item was refined wordings to adapt to the ERP post-implementation context. All items were measured using a seven-point Likert type scale (ranging from 1 = “strongly disagree” to 7 = “strongly agree”). Three items measuring social capital were adapted from Kim and Lee’s (2006) research, which focused on measuring users’ relationship network. The items measuring motivation were adapted from Ko et al. (2005). Six items were used to measure intrinsic motivation, which focused on users’ satisfaction that lies in knowledge sharing itself. Twenty seven items measuring ERP system usage were adapted from Doll and Torkzadeh (1998), which focused on individual’s ERP system usage with respect to decision support, work integration and customer service. Ten items measuring self-efficacy were adapted from Compeau and Higgins (1995) to evaluate user’s belief in his/her ability to use the ERP system in work after training. Six items measuring IT Support were adapted from Kim and Lee’s (2006) research to perform functional business, which focused on measuring utilization and end-user focus. Six items

measuring supervisory feedback and support were adapted from Zhou and George(2001). Six items measuring knowledge sharing were adapted from Kwok and Gao (2006) and van denhooff and de Ridder (2004). Those items measured individuals' attitudes towards and behaviors of knowledge sharing on ERP systems.

A cover letter explaining the purpose of the questionnaire, the aim of the study and the privacy of information has been provided to the questionnaire in order to encourage more responses. The questionnaire has been translated into Arabic for documentation purposes and facilitates it to the reader (Appendix C).

The questionnaire was composed of two parts:

**Part I:** demographic information: gender, social status, age, educational degree, place of residence, current position, years of experience in current position, beneficiaries of your services.

**Part II:** Consist of three sections:

1. Estimating ERP system usage.
2. Estimating the impact of knowledge sharing on ERP system usage.
3. Estimating the Antecedent which influence on Knowledge sharing and ERP system.
  - Social Capital
  - Intrinsic motivation
  - Self efficacy
  - IT Support
  - Supervisory Feedback &Support

#### **4.7 Test of Normality**

Normality test will be applied to identify the type of the statistical tests .Identification of the statistical tests types depends on testing the normality of the collected data; if the collected data is normally distributed, parametric test was used. On the other hand, non-parametric tests would be used, if the collected data was non-normally distributed. The Central Limit Theorem states that for sample sizes sufficiently large (greater than 30), the shape of the distribution of the sample means obtained from any population (distribution) will approach a normal distribution (Klemens, 2008). The number of the respondents equals 235 which is large enough to consider the shape of the data



distribution approaching normal distribution. Thus the researcher can use parametric tests to perform all required computations to test the study hypotheses and answering its questions.

#### **4.8 Statistical analysis Tools**

In order to extract information from collected data, different statistical analysis tests utilized. The Data analysis utilized by (SPSS 15).And, the researcher utilized the following statistical tools:

1. Cronbach's Alpha for Reliability Statistics.
2. Person correlation for Validity.
3. Frequency and Descriptive analysis.
4. One Sample t test.
5. Regression model.
6. Independent Samples T-test.
7. Analysis of variance.

#### **4.9 Content validity of the questionnaire:**

Content related validity examines the extent to which the method of measurement includes all the major elements relevant to the construct being measured. Two methods were used to achieve this type of validity:

##### **4.9.1 The Experts Validation:**

The questionnaire was evaluated by ten experts in the field from the Islamic University in different departments as engineering, commerce, medicine, Information Technology. By a result of this review; some questions were modified.

##### **4.9.2 Pilot Study**

Appleton (1995) mentions that Pilot and Hungler (1985) define the questionnaire validity as the degree to which an instrument measures what it is supposed to be measuring (Appleton 1995). The purpose of the pilot study was two-fold, Firstly, to examine and verify the appropriateness of the questionnaire. Secondly, to ascertain the readability and appropriateness of survey questions.

A pilot study was conducted before collecting the primary data to assess reliability and validity of the questionnaire by distributing the questionnaire on random sample consists of respondents from the study population. It provides a trial run for the questionnaire, which involves testing the wordings of question, identifying ambiguous questions, testing the techniques that used to collect data. (30) Questionnaires were distributed to an exploratory sample during April, 2014 in order to examine the questionnaire validity and reliability. After ensuring the questionnaire validity and reliability, the researcher had distributed the questionnaire to the residual employees of the population.

#### **4.10 Statistical Validity of the questionnaire**

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include internal validity and structure validity. To insure the validity of the questionnaire, two statistical tests should be applied. The first test is Criterion-related validity test (person test) which measures the correlation coefficient between each paragraph in one field and the whole field. The second test is structure validity test (Spearman test) that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one filed and all the fields of the questionnaire that have the same level of similar scale.

##### **4.10.1 Internal Validity**

Internal validity of the questionnaire is the first statistical test that is used to test the validity of the questionnaire. It is measured by a scouting sample, through measuring the correlation coefficients between each paragraph in one field and the whole field. **Table 4.1** illustrates the correlation coefficient for each paragraph of the Decision support and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.1: Correlation coefficient of each paragraph of “Decision support” and the total of this field.**

No.	Correlation Coefficient	P-Value (Sig.)
1. I use this application to decide how to best approach a problem	0.629	0.000*
2. I use this application to help me think through problems	0.818	0.000*
3. I use this application to make sure the data matches my analysis of problems	0.815	0.000*
4. I use this application to check my thinking against the data	0.795	0.000*
5. I use this application to make sense out of data	0.652	0.000*
6. I use this application to analyze why problems occur	0.723	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.2** clarifies the correlation coefficient for each paragraph of the Decision rationalization and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.2 : Correlation coefficient of each paragraph of “Decision rationalization”**

No.	Correlation Coefficient	P-Value (Sig.)
1. I use this application to help me explain my decisions	0.888	0.000*
2. I use this application to help me justify my decisions	0.865	0.000*
3. I use this application to help me make explicit the reasons for my decisions	0.895	0.000*
4. I use this application to rationalize my decisions	0.843	0.000*
5. I use this application to control or shape the decision process	0.901	0.000*
6. I use this application to improve the effectiveness and efficiency of the decision process	0.618	0.000*
7. I use this application to make the decision process more rational		

\* Correlation is significant at the 0.05 level

**Table 4.3** clarifies the correlation coefficient for each paragraph of the Work integration and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.3: Correlation coefficient of each paragraph of “Work integration”**

No.	Correlation Coefficient	P-Value (Sig.)
1. I use this application to communicate with other people in my work group	0.852	0.000*
2. I use this application to coordinate activities with others in my work group	0.907	0.000*
3. I use this application to exchange information with people in my work group	0.675	0.000*
4. I use this application to monitor my own performance	0.813	0.000*
5. I use this application to plan my work	0.717	0.000*
6. I use this application to communicate with people who report to me	0.838	0.000*
7. I use this application to communicate with people I report to	0.856	0.000*
8. I use this application to keep my supervisor informed	0.834	0.000*
9. I use this application to get feedback on job performance	0.786	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.4** clarifies the correlation coefficient for each paragraph of the Customer service and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.4: Correlation coefficient of each paragraph of “Customer service”**

No.	Correlation Coefficient	P-Value (Sig.)
1. I use this application to deal more strategically with internal and/or external customers	0.717	0.000*
2. I use this application to serve internal and/or external customers	0.386	0.035*
3. I use this application to improve the quality of customer service	0.740	0.000*
4. I use this application to more creatively serve customers	0.649	0.000*
5. I use this application to exchange information with internal and/or external customers	0.778	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.5** clarifies the correlation coefficient for each paragraph of the knowledge sharing and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.5: Correlation coefficient of each paragraph of “knowledge sharing ”**

No.	Correlation Coefficient	P-Value (Sig.)
1. We share knowledge using multiple channels, such as email or face-to-face meeting.	0.864	0.000*
2. Our approaches to sharing knowledge are very flexible in time and place	0.871	0.000*
3. Overall, we can conduct knowledge sharing conveniently	0.884	0.000*
4. I think that knowledge sharing is ___ to my study	0.643	0.000*
5. My feeling toward knowledge sharing is__	0.726	0.000*
6. I _____ the idea of knowledge sharing during study	0.521	0.003*

\* Correlation is significant at the 0.05 level

**Table 4.6** clarifies the correlation coefficient for each paragraph of the Social Capital and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.6: Correlation coefficient of each paragraph of “Social Capital”**

No.	Correlation Coefficient	P-Value (Sig.)
1. I communicate with other employees through informal meetings within the organization	0.770	0.000*
2. I interact and communicate with other people or groups outside the organization	0.890	0.000*
3. I actively participate in communities of practice	0.896	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.7** clarifies the correlation coefficient for each paragraph of the intrinsic motivation and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.7: Correlation coefficient of each paragraph of “Intrinsic motivation”**

No.	Correlation Coefficient	P-Value (Sig.)
1. I enjoy learning business and technical knowledge about module	0.845	0.000*
2. The more difficult it is to understand business and technical knowledge about the module, the more I enjoy learning it	0.735	0.000*
3. I enjoy learning business and technical knowledge about the module that are completely new to me	0.817	0.000*
4. I have to feel that I'm personally benefitting from learning business and technical knowledge about the module	0.723	0.000*
5. I want to find out how good I really can be at learning business and technical knowledge about the module	0.767	0.000*
6. I'm more comfortable when I can set my own goals for learning business and technical knowledge about the module	0.784	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.8** clarifies the correlation coefficient for each paragraph of the IT Support and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.8: Correlation coefficient of each paragraph of “IT Support”**

No.	Correlation Coefficient	P-Value (Sig.)
1. I regularly use the Internet, e-mail, and electronic bulletin boards	0.834	0.000*
2. I regularly use our organization's intranet	0.815	0.000*
3. I regularly use our organization's DB (database) and/or EDMS (electronic data management system)	0.671	0.000*
4. I regularly use our organization's KMS (knowledge management system)	0.805	0.000*
5. In this agency, information systems and software are designed to be user-friendly	0.498	0.005*
6. I regularly use our organization's KMS (knowledge management system)	0.719	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.9** clarifies the correlation coefficient for each paragraph of the Self efficacy and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.9: Correlation coefficient of each paragraph of “Self-efficacy”**

No.	Correlation Coefficient	P-Value (Sig.)
1. If there was no one around to tell me what to do as I go.	0.697	0.000*
2. If I had never used a package like it before	0.781	0.000*
3. If I had only the software manuals for reference.	0.704	0.000*
4. If I had seen someone else using it before trying it myself.	0.673	0.000*
5. If there was no one around to tell me what to do as I go.	0.681	0.000*
6. If someone else had helped me get started.	0.427	0.019*
7. If I had a lot Of time to complete the job for which the software was provided	0.599	0.000*
8. If someone showed me how to do it first	0.668	0.000*
9. If I had used similar packages before this one to do the same job	0.499	0.005*
10. If I had just the built-in help facility for assistance	0.728	0.000*

\* Correlation is significant at the 0.05 level

**Table 4.10** clarifies the correlation coefficient for each paragraph of the Feedback and the total of the field. The p-values (Sig) are less than 0.05. So the correlation coefficients of this field are significant at  $\alpha < 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to measure what it is set for.

**Table 4.10: Correlation coefficient of each paragraph of “Supervisory Feedback& Support”**

No.	Correlation Coefficient	P-Value (Sig.)
1. My supervisors provide me with valuable information about how to improve my job performance	0.869	0.000*
2. I find the feedback I receive from my supervisors very useful	0.840	0.000*
3. The feedback I receive from my supervisors helps me improve my job performance	0.709	0.000*
4. My supervisor cares about my career goals and aspirations	0.938	0.000*
5. My supervisor cares about achievement of my career goals	0.913	0.000*
6. My supervisor supports me to acquire additional training or education, if necessary, to further my career	0.908	0.000*

\* Correlation is significant at the 0.05 level

#### 4.10.2 Structure Validity of the Questionnaire:

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each dimension and the validity of the whole questionnaire. It measures the correlation coefficient between one filed and all the fields of the questionnaire that have the same level of Likert scale.

**Table 4.11** clarifies the correlation coefficient for each field and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at  $\alpha < 0.05$ , so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

**Table 4.11: Correlation coefficient of each field and the whole of questionnaire**

No.	Field	Correlation Coefficient	P-Value (Sig.)
1.	Decision support	0.763	0.000*
2.	Decision rationalization	0.757	0.000*
3.	Work integration	0.817	0.000*
4.	Customer service	0.523	0.000*
5.	knowledge sharing	0.666	0.003*
6.	Social Capital	0.774	0.000*
7.	Intrinsic motivation	0.816	0.000*
8.	IT Support	0.745	0.000*
9.	Self-efficacy	0.854	0.000*
10.	Feedback	0.728	0.000*

\* Correlation is significant at the 0.05 level

#### **4.11 Reliability of the Research:**

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring (Polit & Hunger, 1985). Reliability can be equated with stability, consistency or dependability of measuring tool. The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient (Polit & Hunger, 1985).

Because it is difficult to return the scouting sample of the questionnaire that is used to measure the questionnaire validity to the same respondents due to the different work conditions to this sample. Therefore, Cronbach's coefficient alpha test can be applied to the scouting sample in order to measure the consistency of the questionnaire.

##### **4.11.1 Cronbach's Coefficient Alpha:**

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher



degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.811 and 0.933. This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.966 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample.

**Table 4.12 Cronbach's Alpha for each field of the questionnaire and all the questionnaire**

No.	Field	Cronbach's Alpha
1.	Decision support	0.827
2.	Decision rationalization	0.930
3.	Work integration	0.932
4.	Customer service	0.887
5.	knowledge sharing	0.827
6.	Social Capital	0.811
7.	Intrinsic motivation	0.864
8.	IT Support	0.882
9.	Self-efficacy	0.847
10.	Feedback	0.933
All paragraphs of the questionnaire		0.966

#### 4.12 Conclusion:

This chapter presents a description of the research methodology that is followed in the implementation of the field study through identifying different ways and tools used in the completion of this study. It also contains a description of the study population and sampling that is considered a comprehensive survey of the all population.

Finally, the chapter addresses the questionnaire preparation and testing its validity besides; it presents the statistical methods used in the analysis of results. All this is to examine the knowledge sharing role and the driver of antecedents in ERP system usage and Knowledge sharing.

# **Chapter Five: Findings & Discussion**

## **CHAPTER OUTLINE**

**5.1 Introduction**

**5.2 Part I: Respondents Characteristics**

**5.3 Part II: Statistical Analysis for the Questionnaire Fields**

## 5.1 Introduction

This chapter includes detailed description of the findings resulted from applying the statistical tests on the collected data from the questionnaires and discussion of the results with explanations for the meaning of these results. Also, it provides a clear idea about the respondents' demographic data, and provides the variance explained with SPSS tools. The collected data of the respondents presented and the findings will be described and discussed in three main parts:

- The first part will tackle the analysis of the demographic information of the questionnaire respondents.
- The second part will apply the statistical tests indicated in section 4.8: (Statistical Analysis on the collected data from questionnaire respondents). The overall results will be compared with the previous studies results.
- The third part will testify the study hypothesis. The findings of this test will be discussed and compared with previous studies results.

## 5.2 Part I: Respondents Characteristics

In this section, the researcher describes and analyzes the respondent's personal characteristics (gender, social status, age, place of residence current position, years of experience in current position, type of customers). Each one of them is described and analyzed separately.

The frequency and percentage for each variable is listed according to the survey categories. The following table describes three results:

### 5.2.1 Gender

**Table (5.1) :Analyzing gender variable**

<b>Variable items</b>	<b>Frequency</b>	<b>Percentage%</b>
Male	136	57.9
Female	99	42.1
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in Table (5.1), the percentage of gender group from male which is equal to 136 (57.9%) by the gender group from female is equal to 99 (42.1%).

### 5.2.2 Marital Status:

Table (5.2) : Analyzing marital status variable

Variable items	Frequency	Percentage%
Single	194	82.6
Married	41	17.4
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in Table (5.2), the percentage of Marital Status group from single which is equal to 194 (82.6%) by the Marital Status group from married is equal to 41 (17.4%) .

### 5.2.3 Residence:

Table (5.3): Analyzing residence variable

Variable items	Frequency	Percentage%
North	2	0.9
Gaza	11	4.7
Middle	48	20.4
Khan Younis	107	45.5
Rafah	67	28.5
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in Table (5.3), the percentage of Residence group from North which is equal to 2 (0.9%) , by the Residence group from Gaza is equal to 11 (4.7%), by the Residence group from Middle is equal to 48 (20.4%), by the Residence group from Khanyounis is equal to 107 (45.5%), by the Residence group from Rafah is equal to 67 (28.5%). The most employees of European Gaza hospital from Kanyounis.

### 5.2.4 Education:

Table (5.4) : Analyzing education variable

Variable items	Frequency	Percentage%
PhD or above	13	5.5
Master degree	32	13.6
Bachelor Degree	136	57.9
Diploma	47	20.0
Secondary school or below	7	3.0
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in Table (5.4), the percentage of Education group from PhD or above which is equal to 13 (5.5%), by the Education group from Master degree is equal to 32 (13.6%)·by the Education group from Bachelor Degree is equal to 136 (57.9%) · by the Education group from Diploma is equal to 47 (20.0%) ·by the Education group from Secondary school or below is equal to 7 (3.0%). The bachelor degree has the most requests in education.

### 5.2.5 Age:

**Table (5.5): Analyzing age variable**

Variable items	Frequency	Percentage%
less than 25 years old	23	9.8
from 25 to 35	105	44.7
35 to 45	72	30.6
above 45 years old	35	14.9
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in Table (5.5), the percentage of age group from less than 25 years old which is equal to 23 (9.8%) ,by the age group from 30 to 35 years which is equal to 105 (44.7%). By the age group from 35 to 45 years is 72 (30.6%). By the age group who are above 45 years old is 35 (14.9%) . Palestinian society is a young population.

### 5.2.6 Current Job:

**Table (5.6): Analyzing current job variable**

Variable items	Frequency	Percentage%
admin. Tasks	21	8.9
Manager	68	28.9
Admin. General	54	23.0
Admin. Assistant	18	7.7
Secretary	15	6.4
Other	59	25.1
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in table (5.6), the results show that the percentage of Current Job group from admin. Tasks which is equal to 21 (8.9%) by the Current Job group from Manager which is equal to 68 (28.9%). by the Current Job group from Admin. general is 54 (23.0%),. by the Current Job group for Admin. Assistant is 18 (7.7%), by the Current

Job group for Secretary is 15 (6.4%), by the Current Job group for other is 59 (25.1%).

### 5.2.7 Experience:

**Table (5.7): Analyzing experience variable**

Variable items	Frequency	Percentage%
less than a year	15	6.4
from one to five years	52	22.1
from five to ten years	72	30.6
more than ten years	96	40.9
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in table (5.7), the results show that the percentage of experience group from less than a year which is 15 (6.4%) by the experience group from one to five years which is equal to 52 (22.1%), by the experience group from five to ten years is 72 (30.6%), by the experience group who are more than ten years is 96 (40.9%). This indicates to a lack of early retirement.

### 5.2.8 Customer's service:

**Table (5.8): Analyzing customers service variable**

Variable items	Frequency	Percentage%
Only patients	45	19.1
Colleagues at work	10	4.3
Multiple categories	180	76.6
<b>Total</b>	<b>235</b>	<b>100.0</b>

As shown in table (5.8), the results show that the percentage of Customers service group from Clients Only patients which is 45 (19.1%) by the Customers service group from Colleagues at work which is equal to 10 (4.3%), by the Customers service group from Multiple categories is 180 (76.6%).

### 5.3 Part II: Statistical Analysis for the Questionnaire Fields

In this section, the researcher describes the collected data from the second part of questionnaire. These findings will be discussed and interpreted to provide an overview of responses and increase our understanding of study variables. Moreover, the findings will be compared to the previous studies findings identifying the differences and similarities and explain the reasons for each field's.

#### ▪ **Testing the Hypothesis :**

To analyze the fields, sign test can be used. The following statistical hypotheses were tested:

-The null hypothesis: test if the resulted average degree equal to 4.

-The alternative hypothesis: test if the resulted average degree is not equal to 4.

If Sig. (P-value) is greater than the significance level  $\alpha = 0.05$  (according to the results of the program SPSS), we don't reject the null hypothesis and in this case the average views of respondents about the phenomenon under study does not differ significantly from the degree of neutrality of 4. On the other hand, if the Sig. (P-value) is less than the significance level  $\alpha = 0.05$  , we rejected the null hypothesis and accept the alternative hypothesis that means the average views of the sample is significantly different from the degree of neutrality. Through the value of the test ,If the reference is positive it means that the arithmetic average of the response over the degree of neutrality and vice versa.

### 5.3.1 First Field (Problem solving ):

Table (5.9) shows the results of the sign test.

**Table 5.9 :Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P _ value	Rank
1. I use this application to decide how to best approach a problem	5.25	75.00	13.267	0.000*	2
2. I use this application to help me think through problems	5.13	73.29	12.779	0.000*	5
3. I use this application to make sure the data matches my analysis of problems	5.31	75.86	14.581	0.000*	1
4. I use this application to check my thinking against the data	5.14	73.43	12.861	0.000*	4
5. I use this application to make sense out of data	5.23	74.71	14.651	0.000*	3
6. I use this application to analyze why problems occure	5.00	71.43	9.927	0.000*	6

\* Average is significant at the 0.05 level

As shown in table(5.9), the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance (  $\alpha = 0.05$  ) and the sign of all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in solving problems. 75.86% of the respondents believe that the system helps them.



### 5.3.1 Second Field (Decision rationalization):

Table (5.10) shows the results of the sign test.

**Table 5.10: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T- test	P – value	Rank
1. I use this application to help me explain my decisions	5.00	71.43	10.564	0.000*	6
2. I use this application to help me justify my decisions	4.93	70.43	9.395	0.000*	7
3. I use this application to help me make explicit the reasons for my decisions	5.03	71.86	10.361	0.000*	4
4. I use this application to rationalize my decisions	5.14	73.43	12.064	0.000*	3
5. I use this application to control or shape the decision process	5.14	73.43	12.077	0.000*	2
6. I use this application to improve the effectiveness and efficiency of the decision process	5.02	71.71	10.256	0.000*	5
7. I use this application to make the decision process more rational	5.15	73.57	12.210	0.000*	1

\* Average is significant at the 0.05 level

Table (5.10) shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in Decision rationalization. 73.57% of the respondents believe that the system helps them.

### 5.3.2 Third Field (Work integration):

Table (5.11) shows the results of the sign test.

**Table 5.11: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P_ value	Rank
1. I use this application to communicate with other people in my work group	5.16	73.71	11.198	0.000*	6
2. I use this application to coordinate activities with others in my work group	5.17	73.86	11.482	0.000*	4
3. I use this application to exchange information with people in my work group	5.25	75.00	13.706	0.000*	2
4. I use this application to monitor my own performance	5.12	73.14	12.031	0.000*	7
5. 5.I use this application to plan my work	4.94	70.57	9.462	0.000*	9
6. I use this application to communicate with people who report to me	5.26	75.14	4.454	0.000*	1
7. I use this application to communicate with people I report to	5.04	72.00	10.296	0.000*	8
8. I use this application to keep my supervisor informed	5.16	73.71	12.221	0.000*	5
9. I use this application to get feedback on job performance	5.21	74.43	12.025	0.000*	3

\* Average is significant at the 0.05 level

**Table (5.11)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied

regarding using the system in Work integration. 75.14% of the respondents believe that the system helps them.

### 5.3.3 Fourth Field (Customer service):

Table (5.12) shows the results of the sign test.

**Table 5.12: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P_ value	Rank
1. I use this application to deal more strategically with internal and/or external customers	5.13	73.29	12.090	0.000*	4
2. I use this application to serve internal and/or external customers	5.25	75.00	10.809	0.000*	2
3. I use this application to improve the quality of customer service	5.12	73.14	12.335	0.000*	5
4. I use this application to more creatively serve customers	5.28	75.43	13.794	0.000*	1
5. I use this application to exchange information with internal and/or external customers	5.23	74.71	13.103	0.000*	3

\* Average is significant at the 0.05 level

**Table (5.12)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in Customer service. 75.43% of the respondents believe that the system helps them.

### 5.3.5 Fifth Field (Knowledge sharing):

Table (5.13) shows the results of the sign test.

**Table 5.13: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P_ value	Rank
1. We share knowledge using multiple channels, such as email or face-to-face meeting.	4.59	65.57	4.750	0.000*	6
2. Our approaches to sharing knowledge are very flexible in time and place.	4.74	67.71	6.429	0.000*	5
3. Overall, we can conduct knowledge sharing conveniently.	4.87	69.57	7.753	0.000*	4
4. I think that knowledge sharing is important to perform my job duties.	5.54	79.14	16.739	0.000*	2
5. My feeling toward knowledge sharing is positive.	5.33	76.14	13.789	0.000*	3
6. I appreciate the idea of knowledge sharing during the work .	5.74	82.00	20.969	0.000*	1

\* Average is significant at the 0.05 level

**Table (5.13)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in Knowledge sharing. 82% of the respondents believe that the system helps them.

### 5.3.6 Sixth Field (Social Capital):

Table (5.14) shows the results of the sign test.

**Table 5.14 :Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P_ value	Rank
1. I communicate with other employees through informal meetings within the organization	4.77	68.14	6.752	0.000*	1
2. I interact and communicate with other people or groups outside the organization	4.50	64.29	4.263	0.000*	3
3. I actively participate in communities of practice	4.53	64.71	4.810	0.000*	2

\* Average is significant at the 0.05 level

**Table (5.14)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in Social Capital. 68.14% of the respondents believe that the system helps them.

### 5.3.4 Seventh Field (Intrinsic motivation):

Table (5.15) shows the results of the sign test.

**Table 5.15: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P_ value	Rank
1. I enjoy learning business and technical knowledge about module.	5.29	75.57	12.101	0.000*	5
2. The more difficult it is to understand business and technical knowledge about the module, the more I enjoy learning it	5.05	72.14	10.001	0.000*	6
3. I enjoy learning business and technical knowledge about the module that are completely new to me	5.38	76.86	14.040	0.000*	4
4. I have to feel that I'm personally benefitting from learning business and technical knowledge about the module	5.39	77.00	14.337	0.000*	3
5. I want to find out how good I really can be at learning business and technical knowledge about the module	5.52	78.86	16.398	0.000*	2
6. I'm more comfortable when I can set my own goals for learning business and technical knowledge about the module	5.54	79.14	16.984	0.000*	1

\* Average is significant at the 0.05 level

**Table (5.15)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied

regarding using the system in Intrinsic Motivation. 79.14% of the respondents believe that the system helps them.

### 5.3.5 Eight Field (IT Support):

Table (5.16) shows the results of the sign test.

**Table 5.16: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T_ test	P_ value	Rank
1. I regularly use the Internet, e-mail, and electronic bulletin boards	5.09	72.71	10.016	0.000*	3
2. I regularly use our organization's intranet	5.00	71.43	9.559	0.000*	5
3. I regularly use our organization's DB (database) and/or EDMS (electronic data management system).	5.28	75.43	13.671	0.000*	2
4. I regularly use our organization's KMS (knowledge management system)	5.00	71.43	9.958	0.000*	4
5. In this agency, information systems and software are designed to be user-friendly	5.52	78.86	17.544	0.000*	1
6. I regularly use our organization's KMS (knowledge management system).	4.85	69.29	7.428	0.000*	6

\* Average is significant at the 0.05 level

**Table (5.16)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in IT Support. 78.86% of the respondents believe that the system helps them.

### 5.3.6 Ninth Field (Self efficacy):

Table (5.17) shows the results of the sign test.

**Table 5.17: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T <sub>test</sub>	P <sub>value</sub>	Rank
1. If there was no one around to tell me what to do as I go.	4.87	69.57	8.123	0.000*	8
2. If I had never used a package like it before.	4.73	67.57	6.773	0.000*	10
3. If I had only the software manuals for reference.	4.80	68.57	7.561	0.000*	9
4. If I had seen someone else using it before trying it myself.	5.11	73.00	11.301	0.000*	6
5. If there was no one around to tell me what to do as I go.	5.20	74.29	12.823	0.000*	1
6. if someone else had helped me get started	5.18	74.00	12.737	0.000*	4
7. If I had a lot Of time to complete the job for which the software was provided.	5.19	74.14	13.117	0.000*	3
8. if someone showed me how to do it first	5.20	74.29	12.718	0.000*	2
9. if I had used similar packages before this one to do the same job	4.88	69.71	8.868	0.000*	7
10. if I had just the built-in help facility for assistance	5.12	73.14	11.995	0.000*	5

\* Average is significant at the 0.05 level

**Table (5.17)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in Self Efficacy. 74.29% of the respondents believe that the system helps them.



### 5.3.10 Tenth field (Supervisory Feedback and Support):

Table (5.18) shows the results of the sign test.

**Table 5.18: Arithmetic average and the probability of value (Sig.)**

No.	Average	The Relative importance	T-test	P - value	Rank
1. My supervisors provide me with valuable information about how to improve my job performance.	4.94	70.57	8.677	0.000*	4
2. I find the feedback I receive from my supervisors very useful	5.28	75.43	13.255	0.000*	2
3. The feedback I receive from my supervisors helps me improve my job performance	5.37	76.71	15.021	0.000*	1
4. My supervisor cares about my career goals and aspirations	4.91	70.14	8.330	0.000*	5
5. My supervisor cares about achievement of my career goals	4.98	71.14	9.320	0.000*	3
6. My supervisor supports me to acquire additional training or education, if necessary, to further my career.	4.89	69.86	7.849	0.000*	6

\* Average is significant at the 0.05 level

**Table (5.18)** shows the means of all paragraphs, are significantly greater than the hypothesized value (4). Also, the Sig values are smaller than the level of significance ( $\alpha = 0.05$ ) and the sign of the all the tests values are positive. This shows that the respondents agreed to these paragraphs. Thus, the results show that people are satisfied regarding using the system in Supervisory Feedback and Support. 76.71% of the respondents believe that the system helps them.

## 5.4 Part III: Hypothesis Analysis:

**Hypothesis (H<sub>1</sub>):** There is a significance effect of the independent variables on knowledge sharing (at level of significance  $\alpha \leq 0.05$ ).

**H<sub>1a</sub>) Feedback quality has significance effect on knowledge sharing .**

To test this hypothesis, variance analysis for the regression model was used to measure if there is significant effect of Feedback quality on knowledge sharing. The results are shown in table (5.19).

**Table (5.19) Result of Regression Model related to feedback**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.825	0.298	9.464	0.000	Significant
slope	0.433	0.057	7.607	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	57.873	Pearson Correlation			0.466
Sig	0.000	R-square			0.199

- Dependent variable: knowledge sharing
- Significant at Sig <0.05

Table (5.19) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.466. R-square equals 0.199 which means that 19.9% of variation in knowledge sharing is explained by Feedback quality and the remaining percentage 80.1% due to other factors that are not included in the model. Since F=57.873 and p-value  $\leq 0.05$ , the relationship between knowledge sharing and Supervisory Feedback and Support is significant. So, the regression equation is:

$$\text{knowledge sharing} = 2.825 + 0.433 * \text{Supervisory Feedback and support} .$$

**H<sub>1b</sub>) Self- Efficacy has significance effect on knowledge sharing.**

To test this hypothesis results variance analysis for the regression model was used to measure if there is significant effect of Self- Efficacy on knowledge sharing. The results are shown in table (5.20).

**Table (5.20) Result of Regression Model related to Self- Efficacy**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	1.361	0.318	4.285	0.000	Significant
slope	0.727	0.062	11.788	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	138.956	Pearson Correlation			0.611
Sig	0.000	R-square			0.374

- Dependent variable: knowledge sharing
- Significant at Sig ≤ 0.05

Table (5.20) shows the linear regression results. Self-efficacy and Knowledge sharing are correlated as indicated by person correlation 0.611. R-square equals 0.374 which means that 37.4% of variation in knowledge sharing is explained by Self- Efficacy and the remaining percentage 62.6% is due to other factors that are not included in the model. Since F=138.956 and p-value ≤ 0.05, the relationship between knowledge sharing and Self- Efficacy is significant. So, the regression equation is:

$$\text{knowledge sharing} = 1.361 + 0.727 * \text{Self - Efficacy}$$

The finding is consistent with some researches (e.g., Abrams et al., 2003; Cabrera & Cabrera, 2002; Cabrera et al., 2006; Chou et al., 2014). Self-efficacy directly facilitates user’s attitudes and behaviors of knowledge sharing. That is, individuals who have more self-efficacy would be more willing to share knowledge with others in the ERP post-implementation stage.

***H<sub>1c</sub>* Intrinsic motivation has significance effect on knowledge sharing .**

To test this hypothesis, variance analysis for the regression model was used to measure if there is significant effect of intrinsic motivation on knowledge sharing. The results are shown in table (5.21).

**Table (5.21) Result of Regression Model related to intrinsic motivation**

Sig	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.241	0.329	6.819	0.000	Significant
slope	0.518	0.060	8.681	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	75.360	Pearson Correlation			0.494
Sig	0.000	R-square			0.244

- Dependent variable: knowledge sharing
- Significant at Sig <0.05

Table 5.21 shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.494. R-square equals 0.244 which means that 24.4% of variation in knowledge sharing is explained by intrinsic motivation and the remaining percentage 75.6% is due to other factors that are not included in the model. Since  $F=138.956$  and  $p\text{-value} \leq 0.05$ , the relationship between knowledge sharing and Intrinsic motivation is significant. So, the regression equation is:

$$\text{knowledge sharing} = 2.241 + 0.518 * \text{Intrinsic motivation} .$$

Previous research has demonstrated that motivation is a very important key to knowledge sharing. In that research, both intrinsic motivation and extrinsic motivation made significant impacts on knowledge sharing (e.g., Constant, Kiesler, & Sproull, 1994; Osterloh & Frey, 2000). Chou et al. (2014) research found that employees prefer to ask colleagues for help when they face problems in operating ERP systems. And thus earn the intangible intrinsic rewards (such as respect, reputation, and praise) that may be more important than the extrinsic rewards which explain why the negative effect of extrinsic motivation on knowledge sharing was found. Our findings on intrinsic motivation are contrary to these commonly accepted beliefs.

***H<sub>1d</sub>*) Social Capital has significance effect on knowledge sharing .**

To test this hypothesis results variance analysis for the regression model was used to measure if there is significant effect Social capital on knowledge sharing. The results are shown in table (5.22).

**Table (5.22) Result of Regression Model related to Social Capital**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.817	0.233	12.088	0.000	Significant
slope	0.478	0.048	9.940	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	98.796	Pearson Correlation			0.546
Sig	0.000	R-square			0.298

- Dependent variable: knowledge sharing
- Significant at Sig <0.05

Table 5.22 shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.546. R-square equals 0.298 which means that 29.8% of variation in knowledge sharing is explained Social capital and the remaining percentage 70.2% is due to other factors that are not included in the model. Since

F=98.796 and p-value  $\leq 0.05$ , then it is significant relationship between knowledge sharing and Social Capital is significant. So, the regression equation is:

$$\text{knowledge sharing} = 2.817 + 0.478 * \text{Social capital}$$

According to Chou et al. (2014), individuals prefer to share knowledge with people with whom they are familiar and in whom they trust. Our finding is consistent with Chou et al. (2014) research. This finding supports Davenport and Prusak's (1998) suggestion that managers should build employees' relationships and trust in order to encourage their knowledge transfer.

***H<sub>1e</sub>* IT Support has significance effect on knowledge sharing.**

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effects IT Support on knowledge sharing. The results are shown in table (5.23).

**Table (5.23) Result of Regression Model related to IT Support**

Variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	1.466	0.293	5.004	0.000	Significant
Slope	0.692	0.056	12.461	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F-test	155.285	Pearson Correlation		0.632	
Sig	0.000	R-square		0.400	

- Dependent variable: knowledge sharing
- Significant at Sig <0.05

Table (5.23) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.632. R-square equals 0.400 which means that 40.0% of variation in knowledge sharing is explained IT Support and the remaining percentage 60.0% is due to other factors that are not included in the model. Since F=155.285 and p-value  $\leq 0.05$ , then the relationship between knowledge sharing and IT Support is significant. So, the regression equation is:

$$\text{knowledge sharing} = 1.466 + 0.692 * \text{IT support}$$

The finding is consistent with Kim and Lee (2006) research. Employees' usage of IT applications was an important factor in employee knowledge sharing. By making investments in IT applications and knowledge-sharing systems, executives and managers can enhance employee perceptions of supportive interest in their knowledge-sharing skills.

## 1. Final Model

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effect independent variables on knowledge sharing. The results are shown in table (5.24).

**Table (5.24) Result of Regression Model**

Variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	0.590	0.316	1.865	0.063	Non-Significant
Social Capital	0.214	0.050	4.298	0.000	Significant
Intrinsic motivation	0.073	0.069	1.049	0.295	Non-Significant
IT Support	0.322	0.083	3.862	0.000	Significant
Self-efficacy	0.303	0.085	3.579	0.000	Significant
Supervisory Feedback and Support	0.024	0.063	0.386	0.7000	Non-Significant
<b>ANOVA test</b>			<b>Statistic</b>		
			Pearson Correlation	0.706	
F –test		45.447	R-square	0.498	
Sig		0.000	Adjusted R-square	0.487	

- Dependent variable: knowledge sharing
- Significant at Sig <0.05

Table (5.24) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.706. Adjusted R-square equals 0.487 which means that 48.7% of variation in knowledge sharing is explained by Social Capital, IT Support, and Self efficacy and the remaining percentage 51.3% due to other factors that are not included in the model. Since  $F=45.447$  and  $p\text{-value} \leq 0.05$ , then the relationship between knowledge sharing and independent variables is significant, but Intrinsic motivation and Supervisory Feedback and Support have a non-significant effect on knowledge sharing, while Social Capital, IT Support, and Self efficacy variables have a positive influence on knowledge sharing.

**Hypothesis (H<sub>2</sub>):** There is a significance effect between independent variables and ERP Usage(at level of significance  $\alpha= 0.05$ ).

**H<sub>2a</sub>) Supervisory Feedback and Support has significance effect on ERP Usage.**

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effect Supervisory Feedback and Support on ERP Usage. The results are shown in table (5.25).

**Table (5.25) Result of Regression Model**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.866	0.215	13.343	0.000	Significant
slope	0.450	0.041	11.000	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	121.006	Pearson Correlation		0.585	
sig	0.000	R-square		0.342	

- Dependent variable: ERP Usage
- Significant at Sig <0.05

Table (5.25) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.585. R-square equals 0.342 which means that 34.2% of variation in ERP Usage is explained by Supervisory Feedback and Support and the remaining percentage 65.8% is due to other factors that are not included in the model. Since F=121.006 and p-value  $\leq 0.05$ , then it is significant relationship between ERP Usage and Supervisory Feedback and Support is significant .So, the regression equation is:

$$\text{ERP Usage} = 2.866 + 0.450 * \text{Feedback}$$

**H<sub>2b</sub>) Self efficacy has significance effect on ERP Usage.**

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effects Self efficacy on ERP Usage .The results are shown in table (5.26).

**Table (5.26) Result of Regression Model**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.033	0.241	8.452	0.000	Significant
slope	0.619	0.047	13.257	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	175.747	Pearson Correlation			0.656
sig	0.000	R-square			0.430

- Dependent variable: ERP Usage
- Significant at Sig <0.05

Table (5.26) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.656. R-square equals 0.430 which means that 43.0% of variation in ERP Usage is explained by Self efficacy and the remaining percentage 57.0% is due to other factors that are not included in the model. Since F=175.747 and p-value  $\leq 0.05$ , then the relationship between ERP Usage and Self-efficacy is significant. So, the regression equation is:

$$\text{ERP Usage} = 2.033 + 0.619 * \text{Self efficacy}$$

***H<sub>2c</sub>* IT Support has significance effect on ERP Usage.**

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effects IT Support on ERP Usage .The results are shown in table (5.27).

**Table (5.27)Result of Regression Model**

Variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.365	0.235	10.085	0.000	Significant
slope	0.542	0.044	12.185	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	148.477	Pearson Correlation			0.624
sig	0.000	R-square			0.389

- Dependent variable: ERP Usage
- Significant at Sig <0.05

Table (5.27) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.624. R-square equals 0.389 which means that 38.9% of variation in ERP Usage is explained by IT Support and the remaining percentage 61.1% due to other factors that are not included in the model. Since



F=148.477 and p-value  $\leq 0.05$ , then the relationship between ERP Usage and IT Support is significant. So, the regression equation is:

$$\text{ERP Usage} = 2.365 + 0.542 * \text{IT Support} .$$

***H<sub>2e</sub>* Intrinsic motivation has significance effect on ERP Usage.**

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effect Intrinsic motivation on ERP Usage. The results are shown in table (5.28).

**Table (5.28) Result of Regression Model**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.172	0.224	9.716	0.000	Significant
slope	0.555	0.041	13.680	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	187.129	Pearson Correlation			0.667
sig	0.000	R-square			0.445

- Dependent variable: ERP Usage
- Significant at Sig <0.05

Table (5.28) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.667. R-square equals 0.445 which means that 44.5% of variation in ERP Usage is explained by intrinsic motivation and the remaining percentage 55.5% is due to other factors that are not included in the model. Since F=187.129 and p-value  $\leq 0.05$ , then it is significant relationship between ERP Usage and Intrinsic motivation is significant. So, the regression equation is:

$$\text{ERP Usage} = 2.172 + 0.555 * \text{Intrinsic Motivation}$$

***H<sub>2d</sub>* Social Capital has significance effect on ERP Usage.**

To test this hypothesis results variance analysis for the regression model was used to measure if there is significant effect Social Capital on ERP Usage. The results are shown in table (5.29).

**Table (5.29) Result of Regression Model**

variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	3.475	0.188	18.458	0.000	Significant
slope	0.363	0.039	9.353	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	87.479	Pearson Correlation			0.522
sig	0.000	R-square			0.273

- Dependent variable: ERP Usage
- Significant at Sig <0.05

Table (5.29) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.522. R-square equals 0.342 which means that 27.3% of variation in ERP Usage is explained by Social Capital and the remaining percentage 72.7% is due to other factors that are not included in the model. Since F=87.479 and p-value  $\leq 0.05$ , then the relationship between ERP Usage and Social Capital is significant. So, the regression equation is:

$$\text{ERP Usage} = 3.475 + 0.363 * \text{Social Capital}$$

#### **Final Model**

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effect independent variables on ERP Usage. The results are shown in table (5.30).

**Table (5.30) Result of Regression Model**

Variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	1.146	0.227	5.053	0.000	Significant
Social Capital	0.127	0.036	3.564	0.000	Significant
Intrinsic motivation	0.266	0.050	5.364	0.000	Significant
IT Support	0.058	0.060	0.972	0.332	Non-Significant
Self-efficacy	0.225	0.061	3.709	0.000	Significant
Supervisory Feedback and Support	0.111	0.045	0.2.464	0.014	Significant
<b>ANOVA test</b>			<b>Statistic</b>		
			Pearson Correlation	0.769	
F –test		66.127	R-square		0.591
Sig		0.000	Adjusted R-square		0.582

- Dependent variable: ERP Usage
- Significant at Sig <0.05

Table (5.30) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.591. Adjusted R-square equals 0.582 which means that 58.2% of variation in ERP Usage is explained by Social Capital ,Self-efficacy , Supervisory Feedback and Support and Intrinsic motivation and the remaining percentage 32.8% due to other factors, that are not included in the model, Since  $F=66.127$  and  $p\text{-value} \leq 0.05$ , then the relationship between ERP usage and independent variables is significant, but IT Support have a non-significant effect on ERP Usage, while Social Capital, Self-efficacy, Supervisory Feedback and Support and Intrinsic motivation variables have a positive influence on ERP Usage.

**Hypothesis (H<sub>3</sub>):** There is a significance effect between ERP Usage and knowledge sharing (at level of significance  $\alpha= 0.05$ ).

To test this hypothesis results variance analysis for the regression model was used to measure if there are significant effect knowledge sharing on ERP. The results are shown in table (5.31).

**Table (5.31) Result of Regression Model**

Variable	Coefficients	Std. error	T-test	Sig	Significant Level
Constant	2.602	0.208	12.532	0.000	Significant
slope	0.507	0.040	12.681	0.000	Significant
<b>ANOVA test</b>		<b>Statistics</b>			
F –test	160.812	Pearson Correlation			0.639
Sig	0.000	R-square			0.408

- Dependent variable: knowledge sharing
- Significant at Sig <0.05

Table (5.31) shows the linear regression results. Person correlation shows that the variables are correlated at a value of 0.639. R-square equals 0.408 which means that 40.8% of variation in ERP is explained by knowledge sharing and the remaining percentage 59.8% is due to other factors that are not included in the model. Since  $F=155.285$  and  $p\text{-value} \leq 0.05$ , then the relationship between ERP and knowledge sharing is significant. So, the regression equation is:

$$\text{ERP} = 2.602 + 0.507 * \text{knowledge sharing}$$

**Hypothesis (H<sub>3</sub>):** There is significant differences among respondents toward "the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip" Due to personal traits which are: (gender, social status, age, educational degree ,place of residence ,current position, years of experience in current position , type of customers.)

1. There is significant differences among respondents toward "the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip" due to the gender.

**Table (5.32): the results of the hypothesis due to the gender**

	Gender	N	Mean	Std. Deviation	T_ test	Sig
<b>Decision support</b>	Male	136	5.03	1.074	-2.355	0.019
	Female	99	5.38	1.209		
<b>Decision rationalization</b>	Male	136	4.97	1.221	-1.400	0.163
	Female	99	5.20	1.286		
<b>Work integration</b>	Male	136	4.92	1.400	-3.087	0.002
	Female	99	5.47	1.269		
<b>Customer service</b>	Male	136	5.00	1.195	-2.999	0.003
	Female	99	5.48	1.255		
<b>knowledge sharing</b>	Male	136	4.80	1.305	-3.043	0.003
	Female	99	5.32	1.310		
<b>Social Capital</b>	Male	136	4.50	1.439	-1.231	0.220
	Female	99	4.74	1.618		
<b>Intrinsic motivation</b>	Male	136	5.33	1.194	-0.428	0.669
	Female	99	5.40	1.374		
<b>IT Support</b>	Male	136	5.08	1.101	-0.740	0.460
	Female	99	5.20	1.359		
<b>Self efficacy</b>	Male	136	4.93	1.030	-1.590	0.113
	Female	99	5.17	1.224		
<b>Feedback</b>	Male	136	4.99	1.296	-0.986	0.325
	Female	99	5.17	1.470		

\* The difference between the averages is statistically significant at the level of significance ( $0.05 \leq \alpha$ ).

Table (5.32) shows that by using " Independent samples T-test " test shows that the probability value (Sig.) for Decision support , Work integration, Customer service and knowledge sharing was less than the significance level and then there is statistically significant differences between the answers of respondents about the study sample estimates, but for variables Decision rationalization, Social Capital, Intrinsic motivation, IT Support, Self-efficacy, Feedback was greater than the significance level and then there is no statistically significant differences between the answers of respondents about

the study sample estimates in the productivity of workers the work of plastering them to the variable the gender.

2. There are significant differences among respondents toward "the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip" due to the age.

**Table (5.33): The results of the hypothesis due to the age**

	less than 25 years old	from 25 to 35	35 to 45	above 45 years old	F_ test	Sig
<b>Decision support</b>	5.26	5.19	5.02	5.38	0.870	0.457
<b>Decision rationalization</b>	5.34	5.12	4.82	5.17	1.486	0.219
<b>Work integration</b>	5.68	5.04	5.06	5.27	1.548	0.203
<b>Customer service</b>	5.42	5.18	5.16	5.17	0.284	0.837
<b>knowledge sharing</b>	5.59	5.11	4.80	4.78	2.681	0.052
<b>Social Capital</b>	5.01	4.57	4.60	4.40	0.763	0.516
<b>Intrinsic motivation</b>	5.50	5.33	5.25	5.59	0.680	0.565
<b>IT Support</b>	5.43	5.17	5.00	5.05	0.825	0.481
<b>Self efficacy</b>	5.33	5.06	4.98	4.82	1.009	0.389
<b>Feedback</b>	5.57	5.06	4.80	5.27	2.276	0.081

\* The difference between the averages is statistically significant at the level of significance ( $0.05 \leq \alpha$ ).

Table (5.33) shows that by using " Variance Analysis " test shows that the probability value (Sig.) for all the productivity was greater than the significance level and then there is no statistically significant differences between the answers of respondents about the study sample estimates to the variable the age.

3. There are significant differences among respondents toward "the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip" duo to the educational degree.

**Table (5.34): The results of the hypothesis duo to the educational degree.**

	<b>PhD or above</b>	<b>Master degree</b>	<b>Bachelor Degree</b>	<b>Diploma</b>	<b>Secondary school or below</b>	<b>F_ test</b>	<b>Sig</b>
<b>Decision support</b>	4.75	5.08	5.17	5.42	4.73	1.330	0.259
<b>Decision rationalization</b>	4.81	4.95	5.07	5.25	4.51	0.811	0.519
<b>Work integration</b>	4.76	4.04	50.7	5.54	5.07	1.391	0.238
<b>Customer service</b>	5.09	5.24	5.15	5.28	5.57	0.291	0.883
<b>knowledge sharing</b>	5.06	5.03	4.90	5.23	5.54	0.845	0.498
<b>Social Capital</b>	4.61	4.77	4.54	4.56	5.14	0.373	0.828
<b>Intrinsic motivation</b>	5.34	5.20	5.33	5.50	5.61	0.358	0.838
<b>IT Support</b>	5.32	5.09	5.12	5.09	5.33	0.145	0.965
<b>Self-efficacy</b>	5.10	5.04	5.00	5.01	5.41	0.237	0.917
<b>Feedback</b>	4.98	4.91	5.05	5.25	4.78	0.408	0.803

\* The difference between the averages are statistically significant at the level of significance ( $0.05 \leq \alpha$ ).

Table (5.34) shows that by using " Variance Analysis " test shows that the probability value (Sig.) for all the productivity was greater than the significance level and then there is no statistically significant differences between the answers of respondents about the study sample estimates to the variable the educational degree.

4. There are significant differences among respondents toward "the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip " duo to the Experience.

**Table (5.27): The results of the hypothesis duo to the Experience**

	less than a year	from one to five years	from five to ten years	more than ten years	F- test	Sig
<b>Decision support</b>	5.25	5.06	5.31	5.12	0.581	0.628
<b>Decision rationalization</b>	5.34	5.11	5.11	4.95	0.576	0.631
<b>Work integration</b>	5.53	5.43	5.02	5.02	1.644	0.180
<b>Customer service</b>	5.26	5.20	5.33	5.09	0.520	0.669
<b>knowledge sharing</b>	5.56	5.35	5.21	4.60	5.810	0.001
<b>Social Capital</b>	5.02	4.64	4.69	4.44	0.846	0.470
<b>Intrinsic motivation</b>	5.48	5.37	5.51	5.22	0.790	0.501
<b>IT Support</b>	5.35	5.30	5.29	4.87	2.398	0.069
<b>Self-efficacy</b>	5.29	5.20	5.14	4.81	2.167	0.093
<b>Feedback</b>	5.71	5.34	4.97	4.88	2.586	0.054

\* The difference between the averages are statistically significant at the level of significance ( $0.05 \leq \alpha$ ).

Table(5.34) shows that by using " Variance Analysis " test shows that the probability value (Sig.) for all the productivity was greater than the significance level and then there is no statistically significant differences between the answers of respondents about the study sample estimates to the variable the Experience but for variables knowledge sharing was less than the significance level and then there is statistically significant differences between the answers of respondents about the study sample estimates in the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip variable the Experience.

5. There is significant differences among respondents toward "the antecedents of knowledge sharing in European Gaza Hospital in Gaza strip " duo to the customers service.

**Table (5.35): the results of the hypothesis duo to the customers service.**

	Only patients	Colleagues at work	Multiple categories	F_ test	Sig
<b>Decision support</b>	5.05	5.35	5.18	0.832	0.506
<b>Decision rationalization</b>	5.04	5.65	5.02	1.137	0.340
<b>Work integration</b>	4.86	5.70	5.18	0.956	0.432
<b>Customer service</b>	5.04	5.40	5.21	0.881	0.476
<b>knowledge sharing</b>	4.88	4.95	5.04	0.273	0.895
<b>Social Capital</b>	4.28	4.33	4.69	0.799	0.527
<b>Intrinsic motivation</b>	5.21	5.98	5.30	1.117	0.349
<b>IT Support</b>	4.94	4.74	5.19	0.695	0.596
<b>Self-efficacy</b>	4.94	4.96	5.05	0.101	0.982
<b>Feedback</b>	4.76	4.50	5.16	1.664	0.159

\* The difference between the averages are statistically significant at the level of significance ( $0.05 \leq \alpha$ ).

Table(5.35) shows that by using " Variance Analysis " test shows that the probability value (Sig.) for all the productivity was greater than the significance level and then there is no statistically significant differences between the answers of respondents about the study sample estimates to the variable the customers service. Table (6.1) shows the summary of hypothesis results.

**Table (6.1): Summary of Hypothesis Results.**

#	Hypothesis	Result
<i>H<sub>1a</sub></i>	Supervisory Feedback and Support has significant effect on knowledge sharing.	<b>Not Supported</b>
<i>H<sub>1b</sub></i>	Self-Efficacy has significant effect on knowledge sharing .	<b>Supported</b>
<i>H<sub>1c</sub></i>	Intrinsic motivation has significant effect on knowledge sharing .	<b>Not Supported</b>
<i>H<sub>1d</sub></i>	Social capital has significant effect on knowledge sharing .	<b>Supported</b>
<i>H<sub>1e</sub></i>	IT Support has significant effect on knowledge sharing .	<b>Supported</b>
<i>H<sub>2a</sub></i>	Feedback quality has significant effect on ERP usage.	<b>Supported</b>
<i>H<sub>2b</sub></i>	Self- Efficacy has significant effect on ERP usage.	<b>Supported</b>
<i>H<sub>2c</sub></i>	Intrinsic motivation has significant effect on ERP usage.	<b>Supported</b>
<i>H<sub>2d</sub></i>	Social capital has significant effect on ERP usage .	<b>Supported</b>
<i>H<sub>2e</sub></i>	IT Support has significant effect on ERP usage.	<b>Not supported</b>
<i>H<sub>3</sub></i>	There is a significant relationship between knowledge sharing and ERP Usage .	<b>Supported</b>



# **Chapter Six: Conclusions & Recommendations**

**6.1 Introduction**

**6.2 Conclusions**

**6.3 Recommendations**

**6.4 Benefits and implications of this study**

**6.5 Future Researches**

## **6.1 Introduction**

Being the final chapter in this thesis, the first section will summarize the study findings. The study conclusion will be listed and then the study recommendations will be presented. Finally the future research ideas and recommendations are stated.

## **6.2 Conclusions**

This research investigates the factors affecting employees' knowledge sharing and ERP usage in post implementation stage. Knowledge sharing is a critical factor associated with the success of ERP implementation. This thesis highlights the role of knowledge sharing in ERP post-implementation stage. Five factors (supervisory feedback and support, self-efficacy, social capital, intrinsic motivation, and IT support) are considered affected on knowledge sharing ERP usage.

**In light of the findings that presented in the previous chapter, the most notable conclusions are:**

1. Knowledge sharing is directly affected by IT support, self-efficacy, and social capital that together explain 48.7% of the variance. While ERP Usage is directly affected by Supervisory Feedback and support, self-efficacy, social capital, and intrinsic motivation that together explain 58.2% of variance.
2. The finding confirmed that self-efficacy has a positive impact on knowledge sharing and ERP end users which will be an enabler for employees to share knowledge. Whereas employees without confidence in their ability, they may be disinclined to share knowledge with others and successfully perform an ERP system, users will not be able to share knowledge with others even though they are intrinsically motivated to do so.
3. In addition, this study reveals that employees will be more willing to share knowledge when they own more social capital. Social capital helps them to build a social network with other employees, and have trust in other employees, and be more willing to share knowledge with others.
4. This study also finds that, IT support improved the usage of ERP system, and the employees with use friendly to information systems will be more willing to share knowledge.

5. The findings indicated that intrinsic motivation and supervisory feedback and support have a negative and insignificant effect on knowledge sharing in the ERP post-implementation stage. On the other hand, IT Support has a negative and insignificant effect on ERP Usage.
6. This study proposes that employees will be willing to share knowledge when they have intrinsic motivation. The finding conflicted with the purposes, whereas intrinsic motivation has a negative impact on knowledge sharing, but ERP end users with higher intrinsic motivation will be more willing to use the system.
7. This study also proposes that employees will be willing to share knowledge when they have feedback and support from supervisor. The finding conflicted with the purposes, whereas feedback has a negative impact on knowledge sharing, but ERP end users with higher supervisory feedback will be more willing to use the system.
8. There are no significant differences among respondents toward "the antecedents of knowledge sharing and ERP usage in European Gaza Hospital in Gaza strip in Palestine" due to personal traits which are: gender, age, educational degree, social status, place of residence, current position, years of experience in current position, beneficiaries of services.

### **6.3 Recommendations**

In the light of the study result and findings, the researcher recommends the following:

- To apply ERP system for daily operations and problem solving in European Gaza hospital.
- To invest in knowledge sharing in European Gaza hospital and to ensure to use practices that help employees sharing their knowledge in using ERP system (Health care system).
- To apply comprehensive training plans depending on the employee's training needs.
- To prepare face-to-face meetings and occasions for employees to build relationships.
- To apply IT infrastructure and use the user-friendly products in the hospital to support the employees in their works.

## **6.4 Benefits and implications of this study:**

In order to cover the topic of this study, the researcher in this section tried to conclude some of the benefits and implications of this study results. So, this section will focus on both theoretical and practical implications which may be useful for European Gaza hospital and organizations.

### **A. Theoretical implications:**

our findings indicate that intrinsic motivation has a negative and insignificant effect on knowledge sharing in the ERP post-implementation stage which conflicted with many research. Scholars may identify what factors would enhance intrinsic motivation. For example, Kim and Lee (2005) suggested that providing appropriate feedback will enhance an individual's sense of self-worth. Deci's (1973) study found that positive feedback increased participants' intrinsic motivation. . Finally, this study found that intrinsic motivation did not encourage knowledge sharing after ERP implementation, which conflict with much new research. An individual's intrinsic motivation is important to his (her) knowledge sharing attitude/behavior, managers may incorporate specific activities to raise employees' intrinsic motivation (chou .h et al, 2014).

### **B. Practical implications:**

Decision-makers and managers in European Gaza Hospital should establish effective policies and design activities to encourage knowledge sharing among employees in an organization through face-to-face meetings. In line with this, managers could create locations and occasions for employees to interact informally and provide more opportunities for them to build relationships and nurture interpersonal trust. Training strengthens employees' self-efficacy; managers should continuously provide training courses to increase employees' self-efficacy after ERP implementation.

## **6.5 Future Research**

There are several limitations that should be mentioned.

First, this study focused on individual level factors, future study may include team factors such as team norms.

Second, there are many variables influenced on knowledge sharing which future study may include it such as organizational culture, organizational learning and leadership

style. Additionally, future research can capture more variables from other domains to further enhance our understanding of ERP implementation.

Third, social capital is comprised of three dimensions: (1) structural dimension; (2) relational dimension; and (3) cognitive dimension. This study focused on individuals' relationships only, the structural dimension. Some research argued that the cognitive and relational dimensions, such as trust, shared vision and shared language, are also important for knowledge sharing. Future research may employ the cognitive and relational dimensions in their study.

Fourth, future study may include the aforementioned variables to make the research more comprehensive.

Five, future research can also explore the interrelationships between individual, organizational and technological variables and their effect on the usage of ERP system.

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# **Appendixes**

**Appendix A: Questionnaire (Arabic Version)**

**Appendix B: Questionnaire (English Version)**

**Appendix C: List of Experts who reviewed the questionnaire**

# Appendixes

## Appendix A

### Questionnaire (Arabic Version)



دراسة استقصائية حول مدى مساهمة تبادل المعرفة (Knowledge Sharing) بين الموظفين وعوامل مساندة  
أخري لإنجاح نظام تخطيط موارد المؤسسات (ERP Success)

عزيزي الموظف..

يهدف البحث لدراسة المعلومات الأساسية الداعمة لتبادل المعرفة وتقييم دور الوسيط لتبادل المعرفة في تسهيل استخدام نظام تخطيط موارد المؤسسات ERP system في مرحلة ما بعد التنفيذ. حيث إنني في مرحلة جمع المعلومات لإعداد دراسة بحثية عن تبادل المعرفة بين الموظفين لتسهيل استخدام هذا النظام (المتعارف عليه بنظام كير في مستشفى غزة الأوربي) لإكمال الأطروحة العلمية لنيل درجة الماجستير في إدارة الأعمال من الجامعة الإسلامية في غزة.

حصلت على الأذن من السيد (مدير المستشفى)؛ الدكتور يوسف العقاد، لتوزيع الاستبيان على الموظفين العاملين في المستشفى. سأكون ممتنة لكم إن وافقتم على تعبئة الاستبيان، ولكم مطلق الإرادة والحرية في عدم الإجابة عن أي سؤال لا ترغبون بالإجابة عنه. كما وإنني أقدر جهودكم عاليا في الإجابة على أسئلة الاستبانة؛ حيث يستغرق تعبئتها 15-20 دقيقة، مع العلم أن المعلومات لن تستخدم إلا لأغراض البحث العلمي. لذا أرجو التكرم بالإجابة عليها بصدق وموضوعية ولكم مني جزيل الشكر.

أشكر لكم حسن تعاونكم، وأقدر لكم جهودكم ووقتكم الثمين لتعبئة الاستبيان.

الباحثة: غدیر عبد اللطيف أبوصفر

برنامج الماجستير في إدارة الأعمال - كلية التجارة

الجامعة الإسلامية - غزة


جوال: 0599726743

شكرا لتعاونكم المخلص

أولاً: البيانات الشخصية

1. الجنس	<input type="checkbox"/> ذكر	<input type="checkbox"/> أنثى
2. الحالة الاجتماعية	<input type="checkbox"/> متزوج	<input type="checkbox"/> غير متزوج
3. مكان السكن	<input type="checkbox"/> الشمال	<input type="checkbox"/> غزة
	<input type="checkbox"/> الوسطى	<input type="checkbox"/> خان يونس
	<input type="checkbox"/> رفح	
4. المستوى التعليمي	<input type="checkbox"/> دكتوراه أو أعلى	<input type="checkbox"/> ماجستير
	<input type="checkbox"/> دبلوم	<input type="checkbox"/> ثانوية عامة فأقل
5. العمر	<input type="checkbox"/> أقل من 25 عام	<input type="checkbox"/> من 25 إلى أقل من 35 عام
	<input type="checkbox"/> من 35 إلى أقل من 45 عام	<input type="checkbox"/> 45 عام فأكثر
6. الوظيفة الحالية	<input type="checkbox"/> طبيب	<input type="checkbox"/> ممرض
	<input type="checkbox"/> مساعد إداري	<input type="checkbox"/> سكرتير
	<input type="checkbox"/> إداري	<input type="checkbox"/> مهن صحية
		<input type="checkbox"/> مساعدة, حددها
7. سنوات الخبرة في الوظيفة الحالية	<input type="checkbox"/> أقل من سنة	<input type="checkbox"/> من سنة إلى أقل من خمس سنوات
	<input type="checkbox"/> من خمس إلى أقل من عشر سنوات	<input type="checkbox"/> عشر سنوات فأكثر
8. المستفيدون من خدماتك	<input type="checkbox"/> المرضى فقط	<input type="checkbox"/> الزملاء في العمل فقط
		<input type="checkbox"/> فئات متعددة

ثانياً: استخدام النظام الصحي المحوسب والاستفادة منه في دعم واتخاذ القرارات، يرجى الاختيار بناء على درجة موافقتك على كل من العبارات التالية


7		1	(1 - غير موافق بشدة، -7 موافق بشدة)	البند
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A. استخدام النظام الصحي المحوسب في حل المشكلات

7	6	5	4	3	2	1	1. يساعدني النظام في تحليل ودراسة المشكلة.
7	6	5	4	3	2	1	2. يساعدني النظام في إقرار ما هي أفضل وسيلة للتعاطي مع المشكلة.
7	6	5	4	3	2	1	3. يمكنني استخدام النظام لكي أصل إلى بيانات تتفق مع تحليلي للمشكلة.
7	6	5	4	3	2	1	4. يمكنني استخدام النظام للتحقق من مدى توافق أفكارني مع البيانات الخاصة بالمشكلة.
7	6	5	4	3	2	1	5. يمكنني استخدام النظام لكي أتوصل لتقديرات مناسبة من هذه البيانات.
7	6	5	4	3	2	1	6. يمكنني استخدام النظام لتحليل سبب حدوث المشاكل.

B. استخدام النظام الصحي المحوسب في ترشيد القرار

7	6	5	4	3	2	1	1. يساعدني التطبيق في توضيح وشرح قراراتني.
7	6	5	4	3	2	1	2. يساعدني التطبيق في تبرير قراراتني.

7						1	البند
7	6	5	4	3	2	1	3. يساعدني التطبيق في أن أوضح الأسباب لاتخاذ قراراتي.
7	6	5	4	3	2	1	4. يمكنني استخدام هذا التطبيق لترشيد اتخاذ القرارات.
7	6	5	4	3	2	1	5. يمكنني استخدام هذا التطبيق في صياغة عملية اتخاذ القرار والتحكم بها.
7	6	5	4	3	2	1	6. يمكنني استخدام هذا التطبيق لأحسن من فاعلية عملية اتخاذ القرار.
7	6	5	4	3	2	1	7. يمكنني استخدام هذا التطبيق لجعل عملية اتخاذ القرار أكثر عقلانية


**C. استخدام النظام الصحي المحوسب في تحقيق الانسجام الوظيفي والاندماج في العمل**

7	6	5	4	3	2	1	1. يمكنني استخدام هذا التطبيق لأتواصل مع أشخاص آخرين في فريق عملي
7	6	5	4	3	2	1	2. يمكنني استخدام هذا التطبيق لتنسيق الأنشطة مع الآخرين في فريق عملي.
7	6	5	4	3	2	1	3. يمكنني استخدام هذا التطبيق لتبادل المعلومات مع أشخاص آخرين في فريق عملي.
7	6	5	4	3	2	1	4. يمكنني استخدام هذا التطبيق لمراقبة أدائي في العمل.
7	6	5	4	3	2	1	5. يمكنني استخدام هذا التطبيق لتخطيط أعمالي
7	6	5	4	3	2	1	6. يمكنني استخدام هذا التطبيق لأتواصل مع المرؤوسين.
7	6	5	4	3	2	1	7. يمكنني استخدام هذا التطبيق لأتواصل مع رؤسائي في العمل.
7	6	5	4	3	2	1	8. يمكنني استخدام هذا التطبيق لإبقاء مشرفي على اطلاع بحوثيات العمل.
7	6	5	4	3	2	1	9. يمكنني استخدام هذا التطبيق للحصول على تغذية راجعة عن أدائي الوظيفي.

**D. استخدام النظام الصحي المحوسب في خدمة المستفيدين (المرضى والموظفين)**

7	6	5	4	3	2	1	1. يمكنني استخدام هذا التطبيق للتعاطي بعمق وتبصر مع قضايا وحاجات المستفيدين
7	6	5	4	3	2	1	2. يمكنني استخدام هذا التطبيق من خدمة المستفيدين الداخليين أو الخارجيين
7	6	5	4	3	2	1	3. يمكنني استخدام هذا التطبيق لتحسين جودة خدمة المستفيدين.
7	6	5	4	3	2	1	4. يمكنني استخدام هذا التطبيق من خدمة المستفيدين بشكل أكثر إبداعا.
7	6	5	4	3	2	1	5. يمكنني استخدام هذا التطبيق لتبادلا لمعلومات مع المستفيدين الداخليين أو الخارجيين

ثالثا: تبادل ومشاركة المعرفة في نطاق العمل، حدد مدى موافقتك على كل من العبارات التالية

7						1	البند
7	6	5	4	3	2	1	1. نقوم أنا وزملائي في العمل بتشارك

								وتبادل المعرفة باستخدامقنواتمتعددة،مثالبريدالإلكترونيوالاجتماعات.
7	6	5	4	3	2	1		2. طريقتنا في تبادل ومشاركة المعرفة مرنة جدا وغير مقيدة بحدود الزمان والمكان.
7	6	5	4	3	2	1		3. عموما، يمكننا تبادل ومشاركة المعرفة بشكل مريح.
7	6	5	4	3	2	1		4. أعتقد أن تبادل ومشاركة المعرفة أمر ضروري ومفيد لتأدية مهامنا الوظيفية.
7	6	5	4	3	2	1		5. يتوفر نظرة إيجابية نحو تبادل ومشاركة المعرفة في نطاق عملي مع الزملاء.
7	6	5	4	3	2	1		6. أقدر وأحترم ممارسة تبادل ومشاركة المعرفة في نطاق العمل مع الزملاء.

رابعاً: القدرة على التواصل والتفاعل أثناء تأدية مهام الوظيفة: اختر الإجابة بناء على درجة موافقتك على كل من العبارات التالية

7	←					1	البند
7	6	5	4	3	2	1	1. (1 - غير موافق بشدة، 7- موافق بشدة)
7	6	5	4	3	2	1	1. أتواصل مع زملائي في العمل من خلال الاجتماعات والوسائل غير الرسمية داخل المؤسسة.
7	6	5	4	3	2	1	2. أتفاعل وأتواصل معاً أشخاص و/أو جماعات أخرى خارج المؤسسة.
7	6	5	4	3	2	1	3. أشارك بنشاط في الأنشطة المجتمعية والمؤسسات الاجتماعية الفاعلة.

خامساً: الدوافع الذاتية نحو تعلم واستخدام النظام الصحي المحوسب، اختر بناء على درجة موافقتك على كل من العبارات التالية

7	←					1	البند
7	6	5	4	3	2	1	1. (1 - غير موافق بشدة، 7- موافق بشدة)
7	6	5	4	3	2	1	1. أشعر بالمتعة في تعلم المعارف التقنية والمهارات التطبيقية الخاصة باستخدام النظام الصحي المحوسب.
7	6	5	4	3	2	1	2. عندما تكون المعارف التقنية والمهارات التطبيقية الخاصة باستخدام النظام الصحي المحوسب أكثر صعوبة، أشعر بالتحدي وأنا استمتع في تعلم ذلك.
7	6	5	4	3	2	1	3. أشعر بالمتعة في تعلم المعارف التقنية والمهارات التطبيقية الخاصة باستخدام النظام الصحي المحوسب، وخصوصاً الجديدة والتي لم أكن أعلمها من قبل.
7	6	5	4	3	2	1	4. من الواجب علي استشعار قيمة تعلم المعارف التقنية والمهارات التطبيقية الخاصة باستخدام النظام الصحي المحوسب.
7	6	5	4	3	2	1	5. أشعر بشغف لمعرفة وقياس كم أنا جيد في تعلم المعارف التقنية والمهارات التطبيقية الخاصة باستخدام النظام الصحي المحوسب.
7	6	5	4	3	2	1	6. أشعر براحة أكثر عندما أضع بنفسني أهدافي الخاصة بتعلم المعارف التقنية والمهارات التطبيقية الخاصة باستخدام النظام الصحي المحوسب.

سادسا: البنية التحتية التكنولوجية الداعمة لتأدية الأعمال الوظيفية، اختر بناء على درجة موافقتك على كل من العبارات التالية:

7	←					1	البند
7	6	5	4	3	2	1	1. استخدم وسائل الاتصال التكنولوجية مثل الإنترنت و البريد الإلكتروني بشكل منتظم.
7	6	5	4	3	2	1	2. استخدم الشبكة الداخلية (التي تحتوي على موارد تكنولوجية) للمؤسسة بشكل منتظم.
7	6	5	4	3	2	1	3. استخدم بانتظام برامج قواعد البيانات والبرنامج الصحي المحوسب.
7	6	5	4	3	2	1	4. استخدم بانتظام برنامج إدارة المعرفة الخاص بتداول ومشاركة المعلومات في المؤسسة.
7	6	5	4	3	2	1	5. النظام الصحي المحوسب لدينا سهل الاستخدام.
7	6	5	4	3	2	1	6. من السهل استخدام النظام الصحي المحوسب بدون تدريب متخصص.

سابعاً: الكفاءة الذاتية والقدرة على استخدام النظام الصحي المحوسب، أستطيع إنجاز أعمالي باستخدام النظام الطبي المحوسب

7	←					1	البند
7	6	5	4	3	2	1	1. حتى لو لم يكن حولي من يخبرني ماذا أفعل بالضبط كلما تقدمت في العمل.
7	6	5	4	3	2	1	2. حتى لو لم استخدم برنامج محوسب شبيه من قبل.
7	6	5	4	3	2	1	3. اذا كان لدي دليل المستخدم الإلكتروني الخاص بالنظام كمرجع فقط.
7	6	5	4	3	2	1	4. اذا رأيت احد قبلي يستخدم النظام قبل أن أجربه بنفسي.
7	6	5	4	3	2	1	5. اذا كنت قادر على استدعاء احد للمساعدة عندما اقع في مشكلة.
7	6	5	4	3	2	1	6. اذا تواجد شخص آخر يساعدني في البدء.
7	6	5	4	3	2	1	7. اذا كان لدي وقت كثير لاستكمال عملي الذي صمم النظام الصحي المحوسب لمعالجته.
7	6	5	4	3	2	1	8. اذا أراني شخص آخر كيف أستخدم النظام في البداية.
7	6	5	4	3	2	1	9. اذا استخدمت برامج محوسبة مشابهة من قبل لإنجاز نفس العمل.
7	6	5	4	3	2	1	10. اذا توفر وسيلة المساعدة الداخلية في البرنامج.

ثامنا: التغذية الراجعة والدعم من الرؤساء وزملاء العمل، اختر بناء على درجة موافقتك على كل من العبارات التالية:

7	←					1	البند
7	6	5	4	3	2	1	1. يقوم رؤسائي في العمل بتقديم معلومات قيمة حول كيفية تحسين أدائي لمهامي الوظيفية.
7	6	5	4	3	2	1	2. أجد أن التغذية الراجعة والملاحظات التي أتلقاها من رؤسائي في العمل، فيما يتعلق بوظيفتي، مفيدة جدا.
7	6	5	4	3	2	1	3. التغذية الراجعة والملاحظات التي أتلقاها من رؤسائي في العمل، فيما يتعلق بوظيفتي، تساعدني في تحسين أدائي لمهام وظيفتي.
7	6	5	4	3	2	1	4. يهتم رؤسائي في العمل بإيضاح أهداف وظيفتي و بتموحياتي وتطلعاتي الوظيفية المستقبلية.
7	6	5	4	3	2	1	5. يهتم رؤسائي في العمل بما أحققه من إنجازات مرتبطة بأهدافي الوظيفية.
7	6	5	4	3	2	1	6. يقدم لي رؤسائي في العمل الدعم اللازم للحصول على تدريب وتعليم إضافي، اذا كانت هناك حاجة، لتحقيق التقدم والنمو الوظيفي.



## ***Appendix B*** ***Questionnaire (English Version)***



### **Survey of employees' knowledge sharing in facilitating ERP system usage**

Dear Employee,

I am gathering research information about the employees' knowledge sharing to facilitate ERP system usage at European Gaza Hospital in Gaza strip to complete a MPA thesis in business administration at the Islamic University of Gaza. The research aims to examine selected antecedents supporting knowledge sharing and assessing the mediating role of knowledge sharing in facilitating ERP system usage in the context of ERP post-implementation.

I have been given permission by (*Dr. Yousef Elaqqad*) to distribute a questionnaire to staff in your organization.

I'll be grateful to you if you would answer questions this questionnaire, with reserving your right not to answer any question do not want to answer.

The researcher shall use these data only for the purpose of scientific research.

PLEASE read the instruction associated with each section and each question carefully. Your responses to the items asked in this questionnaire will be treated with total and absolute confidentiality. Your responses will not be known to anyone outside the research team, and will not be disclosed to anyone within your organization.

THANK YOU for your cooperation and for taking the time and effort to fill out this questionnaire.

**Ms. Ghadeer A. Abusafar**

**Faculty of Commerce**

**Business Administration Department**

**Islamic University of Gaza**

**Mob. 0599726743**

Thank you for your sincere cooperation.

Sincerely yours,

**Section A: Personal Information**

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1. **Sex**                       male     female

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2. **Marital Status**                       single     married

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3. **Residence**                       North       Gaza                       Middle       Khan Y.       Rafah

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4. **Education**                       PhD or above                       Master degree                       Bachelor Degree  
 Diploma     Secondary school or below

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5. **Age**                                       less than 25 years old                       from 25 to 35  
 35 to 45     above 45 years old

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6. **Current Job**       admin. tasks     Manager                       Admin. general  
 Admin. Assistant                       Secretary                       Other, .....

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7. **How long have you been in your current job?**       less than a year                       from one to five years  
 from five to ten years                       more than ten years

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8. **What type of customers do you serve?**       Only patients     Colleagues at work  
 Multiple categories

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**Section B: Estimating ERP system usage**

*Instructions:* The following statements describe the usage of ERP system by your institution (you and other coworkers).


Please indicate the extent to which you *agree or disagree* with each of the statements and circle the appropriate number based on the scale: 7–strongly agree, 1–strongly disagree.

#	Item	1	2	3	4	5	6	7
1. Decision support								
Problem solving								
1.	I use this application to decide how to best approach a problem	1	2	3	4	5	6	7
2.	I use this application to help me think through problems	1	2	3	4	5	6	7
3.	I use this application to make sure the data matches my analysis of problems	1	2	3	4	5	6	7

4.	I use this application to check my thinking against the data	1	2	3	4	5	6	7
5.	I use this application to make sense out of data	1	2	3	4	5	6	7
6.	I use this application to analyze why problems occur	1	2	3	4	5	6	7
<b>Decision rationalization</b>								
1.	I use this application to help me explain my decisions	1	2	3	4	5	6	7
2.	I use this application to help me justify my decisions	1	2	3	4	5	6	7
3.	I use this application to help me make explicit the reasons for my decisions	1	2	3	4	5	6	7
4.	I use this application to rationalize my decisions	1	2	3	4	5	6	7
5.	I use this application to control or shape the decision process	1	2	3	4	5	6	7
6.	I use this application to improve the effectiveness and efficiency of the decision process	1	2	3	4	5	6	7
7.	I use this application to make the decision process more rational	1	2	3	4	5	6	7
<b>2. Work integration</b>								
<b>Horizontal integration</b>								
1.	I use this application to communicate with other people in my work group	1	2	3	4	5	6	7
2.	I use this application to coordinate activities with others in my work group	1	2	3	4	5	6	7
3.	I use this application to exchange information with people in my work group	1	2	3	4	5	6	7
<b>Vertical integration</b>								
1.	I use this application to monitor my own performance	1	2	3	4	5	6	7
2.	I use this application to plan my work	1	2	3	4	5	6	7
3.	I use this application to communicate with people who report to me	1	2	3	4	5	6	7
4.	I use this application to communicate with people I report to	1	2	3	4	5	6	7
5.	I use this application to keep my supervisor informed	1	2	3	4	5	6	7
6.	I use this application to get feedback on job performance	1	2	3	4	5	6	7

3.Customer service							
1.	I use this application to deal more strategically with internal and/or external customers	1	2	3	4	5	6 7
2.	I use this application to serve internal and/or external customers	1	2	3	4	5	6 7
3.	I use this application to improve the quality of customer service	1	2	3	4	5	6 7
4.	I use this application to more creatively serve customers	1	2	3	4	5	6 7
5.	I use this application to exchange information with internal and/or external customers	1	2	3	4	5	6 7

**Section C: Estimating the impact of knowledge sharing on ERP system usage** *Instructions:* the following statements examine how knowledge sharing influence on ERP system usage. Please indicate the degree to which you **agree or disagree** with each of the following statements and circle based on the scale: 7–strongly agree, 1–strongly disagree.

#	Item	1						7
Knowledge sharing								
* Channel richness								
1.	We share knowledge using multiple channels, such as email or face-to-face meeting.	1	2	3	4	5	6 7	
2.	Our approaches to sharing knowledge are very flexible in time and place.	1	2	3	4	5	6 7	
3.	Overall, we can conduct knowledge sharing conveniently.	1	2	3	4	5	6 7	
*Attitude toward knowledge sharing Knowledge sharing								
4.	I think that knowledge sharing is ___ to my study.	1	2	3	4	5	6 7	
5.	My feeling toward knowledge sharing is___.	1	2	3	4	5	6 7	
6.	I _____ the idea of knowledge sharing during study.	1	2	3	4	5	6 7	
* Absorptive capacity								
7.	I think that knowledge sharing is ___ to my study.	1	2	3	4	5	6 7	
8.	My feeling toward knowledge sharing is___.	1	2	3	4	5	6 7	
9.	I _____ the idea of knowledge sharing during study.	1	2	3	4	5	6 7	

**Section D: Estimating the Antecedent which influence on Knowledge sharing Instructions:**  
the following statements some antecedents affect on Knowledge sharing. Please indicate the extent to which you **agree/ disagree** with each of the statements

#	Item	1	2	3	4	5	6	7
<b>1.Social Capital</b>								
	1-I communicate with other employees through informal meetings within the organization.	1	2	3	4	5	6	7
	2-I interact and communicate with other people or groups outside the organization.	1	2	3	4	5	6	7
	3-I actively participate in communities of practice.	1	2	3	4	5	6	7
<b>2.Intrinsic motivation</b>								
1	1-I enjoy learning business and technical knowledge about module.	1	2	3	4	5	6	7
	2 -The more difficult it is to understand business and technical knowledge about the module, the more I enjoy learning it.	1	2	3	4	5	6	7
	3-I enjoy learning business and technical knowledge about the module that are completely new to me.	1	2	3	4	5	6	7
	4- I have to feel that I'm personally benefitting from learning business and technical knowledge about the module.	1	2	3	4	5	6	7
	5-I want to find out how good I really can be at learning business and technical knowledge about the module.	1	2	3	4	5	6	7
	6- I'm more comfortable when I can set my own goals for learning business and technical knowledge about the module.	1	2	3	4	5	6	7
<b>3. IT Support</b>								
<b>*Information Technology Utilization</b>								
2	1- I regularly use the Internet, e-mail, and electronic bulletin boards.	1	2	3	4	5	6	7
1	2-I regularly use our organization's intranet.	1	2	3	4	5	6	7
	3-I regularly use our organization's DB (database) and/or EDMS (electronic data management system).	1	2	3	4	5	6	7
	4-I regularly use our organization's KMS (knowledge management system)	1	2	3	4	5	6	7
<b>*End-User Focus</b>								
	1-In this agency, information systems and software are designed to be user-friendly.	1	2	3	4	5	6	7
	2-I regularly use our organization's KMS (knowledge management system).	1	2	3	4	5	6	7

4. Self efficacy							
I could complete the job using the ERP system .....							
1-...if there was no one around to tell me what to do as I go.	1	2	3	4	5	6	7
2-....if I had never used a package like it before.	1	2	3	4	5	6	7
3-....if I had only the software manuals for reference.	1	2	3	4	5	6	7
4-....if I had seen someone else using it before trying it myself.	1	2	3	4	5	6	7
5-...if there was no one around to tell me what to do as I go.	1	2	3	4	5	6	7
6-....if someone else had helped me get started.	1	2	3	4	5	6	7
7-....if I had a lot Of time to complete the job for which the software was provided.	1	2	3	4	5	6	7
8-....if someone showed me how to do it first.	1	2	3	4	5	6	7
9-...if I had used similar packages before this one to do the same job.	1	2	3	4	5	6	7
10-....if I had just the built-in help facility for assistance.	1	2	3	4	5	6	7
5. Supervisory Feedback & Support							
*Supervisor Feedback							
1-My supervisors provide me with valuable information about how to improve my job performance.	1	2	3	4	5	6	7
2-I find the feedback I receive from my supervisors very useful.	1	2	3	4	5	6	7
3-The feedback I receive from my supervisors helps me improve my job performance.	1	2	3	4	5	6	7
*Supervisor Support							
1-My supervisor cares about my career goals and aspirations.	1	2	3	4	5	6	7
2-My supervisor cares about achievement of my career goals	1	2	3	4	5	6	7
3-My supervisor supports me to acquire additional training or education, if necessary, to further my career.	1	2	3	4	5	6	7

***Appendix C***  
***List of Experts who reviewed the questionnaire***

Name	Place of work in Islamic University
Dr. Waseem Elhabeel	Commerce faculty
Dr. Sameer Safi	Commerce faculty
Dr. Akram Samoor	Commerce faculty
Dr. Sami Abualroos	Commerce faculty
Dr. Twfeeq Brhoum	IT faculty
Dr. Rbhy Baraka	IT faculty
Dr. hatem Elaydy	Engineering faculty
Dr. Anwar Elshekh Khaleel	Faculty of medicine
Dr. Saeed Elghorra	Deanship of Community Service and Continuing Education